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**Draft KUCC and JVWCD Proposal to
the Utah State NRD Trustee and USEPA
CERCLA Remedial Project Manager for a
Groundwater Extraction and Treatment Remedial
Project in Southwestern Salt Lake Valley**

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For additional information

DRAFT
KENNECOTT UTAH COPPER CORPORATION AND
JORDAN VALLEY WATER CONSERVANCY DISTRICT

**PROPOSAL TO THE UTAH STATE NRD TRUSTEE AND
USEPA CERCLA REMEDIAL PROJECT MANAGER FOR A
GROUNDWATER EXTRACTION AND TREATMENT REMEDIAL PROJECT
IN SOUTHWESTERN SALT LAKE VALLEY**

December 16, 1999

1. INTRODUCTION

Kennecott Utah Copper Corporation (KUCC) and Jordan Valley Water Conservancy District (JWVCD) make this joint proposal to the Utah Trustee for natural resource damage (NRD), Dr. Dianne R. Nielson, who also acts as Director of the Utah Department of Environmental Quality (UDEQ). The proposal is also made to the United States Environmental Protection Agency (USEPA) CERCLA Remedial Project Manager for KUCC site remediation, Dr. Eva J. Hoffman. This proposal also makes a recommendation for allocation of water rights to the Utah State Engineer, Robert L. Morgan, PE.

KUCC and JWVCD propose to develop and construct a groundwater extraction and treatment project with groundwater remedial functions, which will provide treated, municipal quality water to the public in the affected area of the southwestern Jordan Valley. KUCC and JWVCD seek to utilize the trust fund set up under the 1995 NRD Consent Decree, in a manner consistent with the terms of the Consent Decree and to restore the equivalent injured resource.

The concepts of this Proposal have been presented to the governing organizations of West Jordan City, South Jordan City, Riverton City, and the Town of Herriman.

1.1 Executive Summary of Proposal

In summary, the Proposal:

- a. Is designed to furnish 9,300 AF/year of municipal quality water to be provided to the public in the Affected Area.
- b. Includes the construction and operation of two reverse osmosis water treatment plants.
- c. Includes construction and operation of pipelines and extraction wells.

- d. Seeks to utilize all portions of the Trust Fund, except that relating to administration and costs. As such, KUCC's portion of the Proposal seeks a reduction in the Irrevocable Letter of Credit (ILC) of half its amount. JWWCD seeks the remaining half of the ILC, together with the balance of the Trust Fund, to supply (restore or replace) the remaining amount of municipal quality water contemplated by the Consent Decree, including replacement of lost concentrate water.
- e. KUCC additional costs and in kind contributions to the Proposal are estimated to be \$164.4 million. JWWCD's additional costs and in kind contributions to the Proposal are estimated to be \$16.4 million.
- f. If the Joint Proposal is approved by September 2000, the proposed schedule anticipates providing municipal quality water to the public in the Affected Area by December 2003.
- g. A proposed allocation of water rights is presented for consideration by the Utah State Engineer. The allocation of water rights is necessary to meet the intent of the NRD Consent Decree. KUCC and JWWCD will submit change applications in Spring 2000 to accomplish the proposed allocations.

2. BACKGROUND

2.1 Natural Resource Damage Claim and Consent Decree (UDEQ)

The Utah Department of Health filed a complaint in 1986 under the provisions of CERCLA seeking damages from KUCC "for injury to, destruction of, and loss of natural resources." The Utah Department of Health was acting as the CERCLA Trustee in making this claim. The claim pertained to injury to surface and groundwater resulting from the release of hazardous substances from KUCC's and its predecessors milling and mining activities in the southwestern portion of the Salt Lake Valley.

In 1990 the Utah Department of Environmental Quality (UDEQ), the successor Trustee, arrived at a natural resource damage (NRD) settlement with KUCC. An NRD consent decree was proposed to the United States District Court for the District of Utah.

JWWCD (then the Salt Lake County Water Conservancy District) petitioned the court to allow JWWCD to intervene, claiming that the proposed consent decree was insufficient to address damages to the groundwater aquifer. Following a hearing in 1991, the District court allowed JWWCD to intervene, finding JWWCD uniquely situated to contribute to resolving the underlying

factual and legal issues associated with the UDEQ claim. The court did not approve the consent decree proposed in 1991.

An appeal to the 10th Circuit Court of Appeals followed, which was dismissed for lack of jurisdiction. The subsequent petition for a writ of certiorari to the United States Supreme Court also was denied.

The three parties (KUCC, UDEQ and JVVCD) entered into negotiations for a settlement. Technical discussions were held regarding potential remedial responses. These discussions resulted in a proposed consent decree dated May 30, 1995. In August 1995, the District court approved and entered the Consent Decree.

The 1995 Consent Decree required KUCC to complete all source control efforts it had been pursuing since 1990. It also created a trust fund that was established for administration by the UDEQ State Trustee, who is appointed as the State CERCLA Trustee for natural resource damage. KUCC has now completed all source control work.

The Trustee utilized the cost of restoration methodology in computing the amount of damage. The value of the settlement was based on the cost of a possible alternative for returning the volume of contaminated water (8,235 acre feet per year) to beneficial use. This method is to extract water through wells and build and operate a treatment plant to produce municipal quality water. It was calculated that a treatment plant using nanofiltration or reverse osmosis technology would have an 85% net output of municipal quality water. This equates to 7,000 acre feet of water as provided for in the Consent Decree, with a loss of 1,235 acre feet of water in the treatment process.

The treatment system concept used for damage calculation requires extraction wells and related facilities, collection pipelines, a treatment plant, a brine discharge pipeline, and a distribution pipeline. The Trustee then calculated the costs of producing 7,000 acre feet of water annually for 50 years, in 1995 dollars, to be \$4,000 per acre foot. The \$4,000 per acre foot cost of treatment includes the capital costs of construction of a treatment plant (40%) and the cost to operate, maintain and replace facilities over an estimated life of 50 years (60%). The present value of funding necessary to undertake such a project was \$28 million.

The trust fund includes \$9 million that was provided to the State Trustee in cash, and "which shall be expended only to restore, replace or acquire the equivalent of the surface or groundwater resources for the benefit of the public in the affected area..."

The trust fund also included an irrevocable letter of credit from KUCC in the amount of \$28 million, escalating annually at 7 percent. The irrevocable letter of credit was the net present value of the funding to undertake the treatment program to produce (treat) municipal quality water from groundwater in the affected area.

The following table shows the increasing value of the \$28 million irrevocable letter of credit and the \$9 million cash payment:

State NRD Trust Fund			
Date	KUCC Irrevocable Letter of Credit Value ^(a) (Millions)	\$9 Million Cash Payment Value ^(b) (Millions)	Total Value (Millions)
September 1995	\$28.0	\$9.0	\$37.0
September 1996	\$30.0	\$9.5	\$39.5
September 1997	\$32.1	\$9.9	\$42.0
September 1998	\$34.3	\$10.4	\$44.7
September 1999	\$36.7	\$10.9	\$47.5
September 2000	\$39.3	\$11.5	\$50.8

(a) Increases at 7% annually

(b) Assumed annual increase of 5%, as invested by UDEQ

"Municipal Quality Water" is defined as water originating west of the Welby Canal with total dissolved solids (TDS) concentration of 500 mg/L (and 250 mg/L sulfate), and water originating east of the Welby Canal to 800 mg/L TDS (and 250 mg/L sulfate). Allocation of the right to use surface or groundwater resources "shall be by the Utah State Engineer pursuant to Utah water law."

The NRD Consent Decree acknowledges the separate CERCLA remedial action process by the USEPA. The Consent Decree contemplates the likelihood of formulating a remedial response for the NRD that would

correlate with the remedial response required by USEPA under federal CERCLA requirements. Because of this, the Consent Decree requires that "the Trustee shall not expend funds secured by the letter of credit until the earlier of two years after the issuance of the ROD or July 1, 2000, unless the Trustee determines that there exists a direct and immediate threat to the public health or the environment that necessitates expenditures to restore, replace or acquire the equivalent of the resource."

Prior to the expenditure of such funds, KUCC can obtain a reduction in the amount of the ILC if KUCC provides and delivers municipal quality water through treatment of contaminated water to a system of a purveyor of municipal and industrial (M&I) water in a manner that is acceptable to the Trustee, and in a manner that meets the specific requirements of the credit provisions.

2.2 Federal CERCLA Requirements (USEPA)

Substantial commencement of remedial studies under the federal requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund) followed the approval of the NRD consent. The main concern of the CERCLA process is the protection of human health and the environment.

In 1995 the USEPA Remedial Project Manager (of Region VIII) formed a Technical Review Committee to oversee the remedial studies. Represented on the Technical Review Committee are UDEQ, USEPA, Utah Department of Natural Resources, Utah State Engineer, Salt Lake City-County Health Department, JWCD, US Geological Survey, University of Utah, local municipalities, and a local chapter of the Sierra Club.

During 1995-1998, KUCC conducted many studies as part of a remedial investigation/feasibility study (RI/FS). The Technical Review Committee provided oversight during this process. Much information and data was produced and provided by KUCC regarding the affected area, including hydrogeology, groundwater quality, groundwater recharge sources, and future groundwater and contaminant movement in the affected area.

The FS included groundwater modeling by KUCC to project various scenarios of future groundwater and contaminant movement. This modeling involved groundwater flow modeling, particle tracking and solute transport modeling. Various scenarios of remedial action were modeled, addressing future time periods of 25, 50 and 150 years. A groundwater model provided by the USGS served as the basis of this modeling, and the final results were reviewed and approved by the USGS.

The final draft RI and FS reports were issued by KUCC in March of 1998. The next steps in the federal CERCLA process involve public hearings, and ultimately issuance of a Record of Decision (ROD) by USEPA. However, the USEPA Remedial Project Manager desires to formulate a remedial response that correlates well with the NRD Consent Decree requirements before proceeding with this process.

2.3 KUCC/JVWCD Study and Conceptual Design

KUCC and JVWCD cooperated in commissioning a study to determine the best method of accomplishing the goals of the NRD Consent Decree and federal CERCLA remedial requirements for the contaminated groundwater in the southwestern Salt Lake Valley. KUCC and JVWCD retained the firm of Camp Dresser and McKee (CDM) to perform this study. This work resulted in a conceptual design for an extraction well and treatment project, which meets the State and federal expectations. The conceptual design is for a project that will produce more than 7,000 AF/year of municipal quality water as was contemplated for the treatment component of the State NRD Consent Decree. It also provides for additional replacement of water beyond that contemplated by the Consent Decree, including the 1,235 AF/year of water otherwise lost in the treatment process.

2.4 JVWCD System and Service Area

JVWCD is a political subdivision of the State of Utah. It was created in 1951 by the State Legislature under the Water Conservancy Act. The District remains under the jurisdiction of the federal Third District Court of the State of Utah.

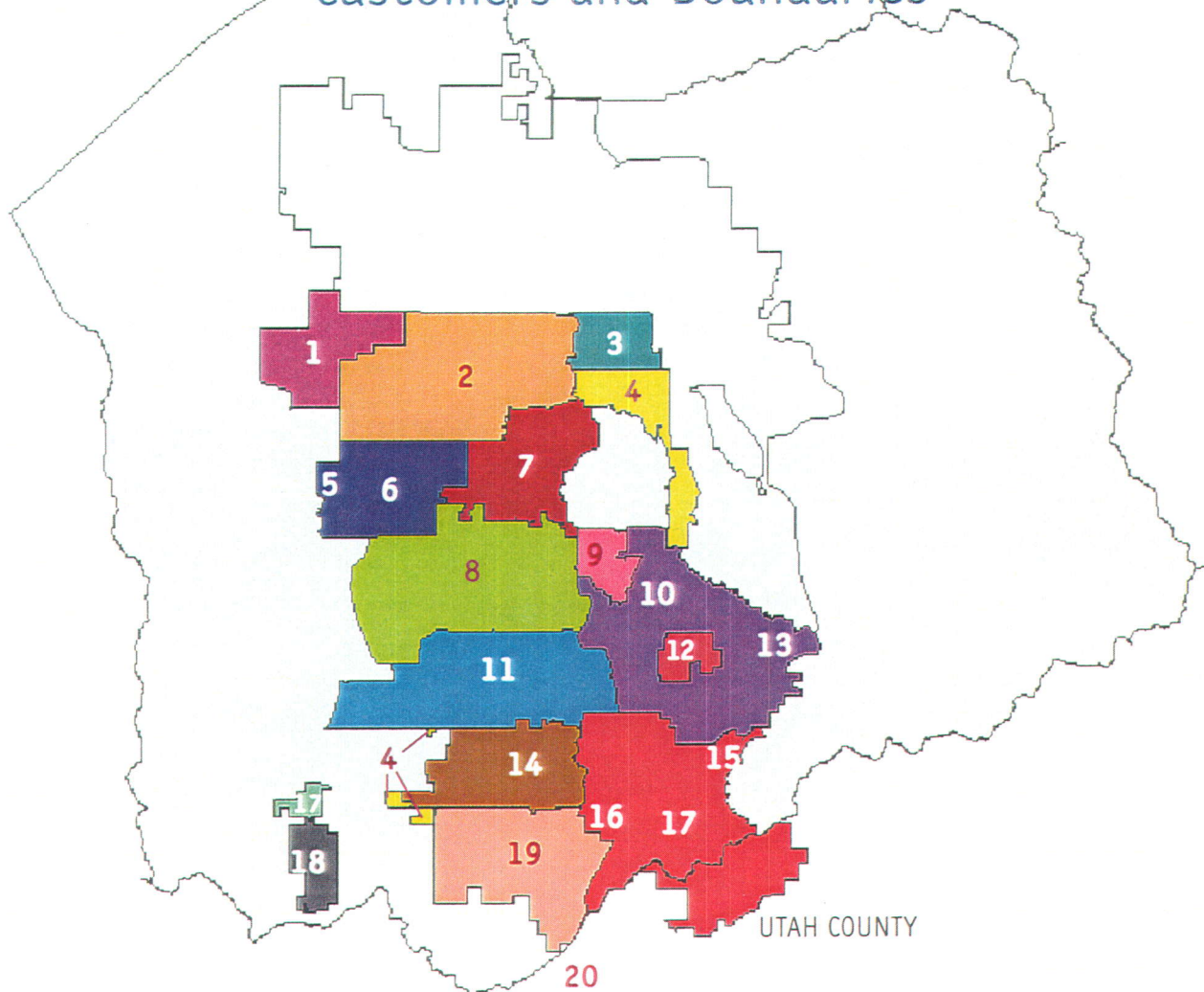
JVWCD is governed by a board of eight directors, who represent seven geographical divisions. They are nominated by either the county commission or a city council, depending upon the division they represent. The Governor appoints each director for a four-year term.

JVWCD provides municipal and industrial (M&I) water to most areas of Salt Lake County that lie outside of the Salt Lake City service area. Portions of northern Utah County are also served by JVWCD. Figure 2.4A shows this service area.

JVWCD provides water under wholesale water purchase contracts to nineteen member agencies, including cities, improvement districts, state agencies and private companies. JVWCD also provides and distributes water to individual homes and businesses on a retail basis in areas where no viable retail agency exists.

Figure 2.4A

Jordan Valley Water Conservancy District Customers and Boundaries



Location of Member Agencies

- | | |
|---|--|
| 1 Magna Water Company | 10 Sandy City* |
| 2 Granger-Hunter Improvement District
(West Valley City) | 11 South Jordan City |
| 3 City of South Salt Lake | 12 White City Water Improvement District |
| 4 JVWCD retail service area
(Granite Park, Holladay, Union Park, Willow Creek
and southwest area) | 13 Willow Creek Country Club |
| 5 Hexcel Corporation | 14 Riverton City |
| 6 Kearns Improvement District | 15 Draper Irrigation |
| 7 Taylorsville-Bennion Improvement
District | 16 Utah State Department of Corrections |
| 8 West Jordan City | 17 Draper City |
| 9 Midvale City | 18 Hi-Country Estates Phase II |
| | 19 Bluffdale City |
| | 20 State Department of Public Safety |

*by contract through 2001

JVWCD operates a raw water collection system that collects water not only from local mountain streams in Salt Lake Valley, but also imports water from the Weber, Provo and Duchesne rivers. JVWCD operates two water treatment plants and a treated water transmission system within Salt Lake Valley. This system is shown in Figure 2.4B. The system contains hundreds of miles of aqueduct, transmission and distribution pipelines, and can convey water from any source to virtually any point within Salt Lake Valley. The system also involves wells, booster pump stations and treated water storage reservoirs.

3. PURPOSES OF PROPOSED PROJECT

KUCC and JVWCD have formulated a proposed project that is comprehensive in meeting the intent of the NRD Consent Decree, as well as the requirements and intent of the federal CERCLA RI/FS process. These purposes are described in the following paragraphs.

3.1 Meet the Requirements and Intent of the NRD Consent Decree

The purposes of this project include the following:

- a. Contain the contaminated groundwater plumes from enlargement.
- b. Place the water to beneficial (municipal) use.
- c. Remediate the aquifer over the long term.
- d. Restore and replace the equivalent of the affected natural resource for the benefit of the public in the affected area.

3.2 Meet the Intent and Remedial Requirements of CERCLA

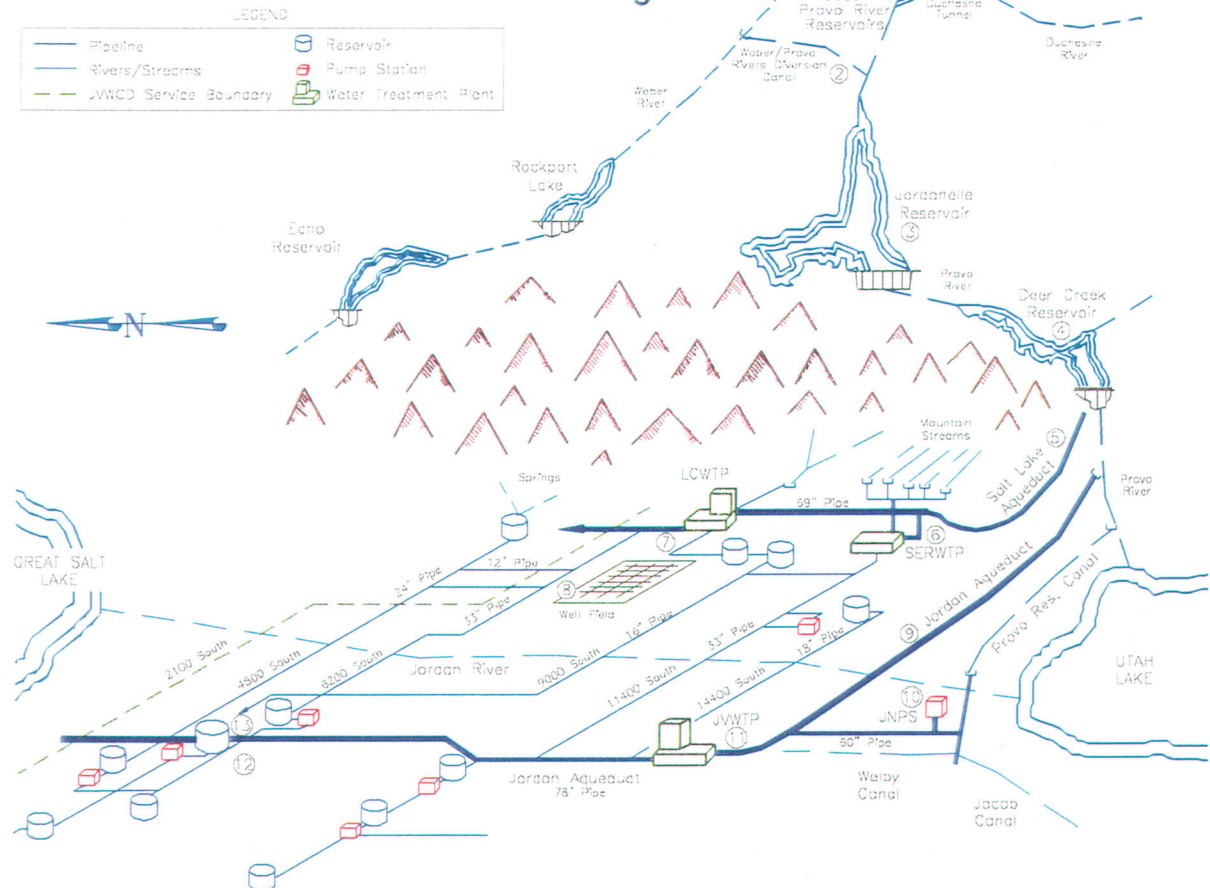
The project includes the following purposes anticipated in the RI/FS process:

- a. Protect human health and the environment.
- b. Remediate the aquifer over the long term.
- c. Contain the acid and highly elevated sulfate plume from enlargement.

3.3 KUCC/JVWCD Purposes

KUCC and JVWCD have additional purposes, which will benefit the public beyond the requirements of the State NRD Consent Decree or federal

Figure 2.4B Jordan Valley Water Conservancy District Water System



1 Upper Provo River Reservoirs. Located at the headwaters of the Provo River, this group of natural lakes has been enlarged for operation as reservoirs. As a major stockholder in the lakes, Jordan Valley Water Conservancy District (JVWCD) receives water directly from storage.

2 Weber/Provo Rivers Diversion Canal. A 12-mile canal with a capacity of 1,000 cfs that conveys water from rights on the Weber River and Echo Reservoir to JVWCD. The canal is also used by the Provo River Water Users Association (PRWUA) for the diversion of Weber River water to supply the Deer Creek Reservoir.

3 Jordanelle Reservoir. As a feature of the Bonneville Unit, Jordanelle Reservoir is the largest storage facility for Central Utah Project collected from the Provo River. Jordanelle has a volume capacity of 320,000 acre-feet (AF). JVWCD anticipates 50,000 AF annually for its municipal and industrial supply.

4 Deer Creek Reservoir. This reservoir is a feature of the Provo River Project. It has a volume capacity of 152,000 AF. JVWCD owns stock in the Provo River Water Users Association, which entitles it to water stored in this reservoir.

5 Salt Lake Aqueduct. This 69-inch diameter pipe, operated by Metropolitan Water District of Salt Lake City, conveys Provo River water from Deer Creek Reservoir to service areas of JVWCD, Salt Lake City, and Sandy City.

6 Southeast Regional Water Treatment Plant. JVWCD's 20 million gallon per day (MGD) facility treats water from the Salt Lake Aqueduct and local mountain streams.

7 Little Cottonwood Treatment Plant. Metropolitan Water District of Salt Lake City's 100 MGD plant delivers treated water to JVWCD, Salt Lake City and Sandy City service areas.

8 Well Field. This high-quality aquifer is the source of groundwater for JVWCD and many municipalities.

9 Jordan Aqueduct. This 78-inch pipe conveys water from Deer Creek and Jordanelle reservoirs to Jordan Valley Water Treatment Plant. Lower portions of the aqueduct transmit treated water to the JVWCD and MWD service areas.

10 Jordan Narrows Pumping Station. This station is currently used to pump Utah Lake water into the Welby and Jacob canals for irrigation purposes.

11 Jordan Valley Water Treatment Plant. This 180 MGD plant is owned by the Central Utah Water conservancy District and is operated by JVWCD.

12 Reservoirs and Pump Stations. These facilities store water and pump it to JVWCD's customers.

13 Jordan Aqueduct Terminal Reservoir. A 100 million gallon drinking water reservoir.

CERCLA requirements, which are included in the proposal. These purposes are to:

- a. Implement a project which is comprehensive and efficient in groundwater development, water delivery, operational and political issues.
- b. Improve the treated water quality beyond the 500-800 mg/L TDS level contemplated in Section I.D. of the Consent Decree, to 250 mg/L TDS.
- c. Restore and replace groundwater from the affected area (see Figure 4.1A) that is lost as a concentrate stream resulting from membrane treatment processes. JVVCD proposes a Jordan River/ shallow groundwater membrane treatment project under its own water rights to accomplish this purpose, that is contemplated in the Consent Decree.
- d. Provide existing facilities for concentrate disposal, in order to create additional cost savings and permitting efficiency.
- e. Better meet the needs of growing municipalities in the Zone A area by providing treated water at a high elevation that allows for westward land development.

4. AFFECTED AREA AND PUBLIC

4.1 Affected Area

The NRD Consent Decree requires that the Trustee use the benefits of the Trust Fund to restore, replace or acquire the equivalent of the natural resource "for the benefit of the public in the Affected Area..." (V.D.4). The Consent Decree defines the "Affected Area" as "the area in the southwestern portion of the Salt Lake Valley where surface and groundwater have been injured by Kennecott's mining and leaching operations." The Consent Decree further defines "injury to...groundwater" as contamination caused by Kennecott's mining and leaching operations resulting in: 1) increased levels over baseline of total dissolved solids, including sulfates, 2) pH levels lower than baseline, 3) metals concentrations exceeding baseline, or 4) solid phase contamination in the aquifer that can be redissolved in the future."

KUCC and JVVCD believe that the best representation of the Affected Area is the map of groundwater sulfate concentrations above 250 mg/L at any level. This is because sulfate concentrations above 250 mg/L are clearly above natural background concentrations. This map was developed in the

RI/FS process, and has been updated by KUCC to represent recent data. That map is shown as Figure 4.1A.

KUCC and JVVCD have defined the envelope showing the Affected Area, as shown in Figure 4.1B. For purposes of the Proposal, the total envelope is divided into two zones, A and B. Zone A encompasses approximately the western half of the Affected Area, and includes the high sulfate and low pH portion of the plume emanating from the Bingham Canyon area, some lower concentration plume areas emanating from the Lark area, and areas of sulfate concentrations from 250 to 1,000 mg/L in the Herriman area. Zone A includes the area commonly referred to by the RI/FS Technical Review Committee as the "acid plume." Zone B encompasses approximately the eastern half of the Affected Area, and includes areas impacted originally by the evaporation ponds in South Jordan. It includes sulfate concentrations generally from 250 to 1,000 mg/L. It includes the majority of the area referred to by the RI/FS Technical Review Committee as the "sulfate plume."

4.2 Public in the Affected Area

Figure 4.2A shows the corporate boundaries of public agencies in the Affected Area. These include the cities of West Jordan, South Jordan and Riverton; the Town of Herriman, and unincorporated Salt Lake County lands.

5. PROPOSED PROJECT

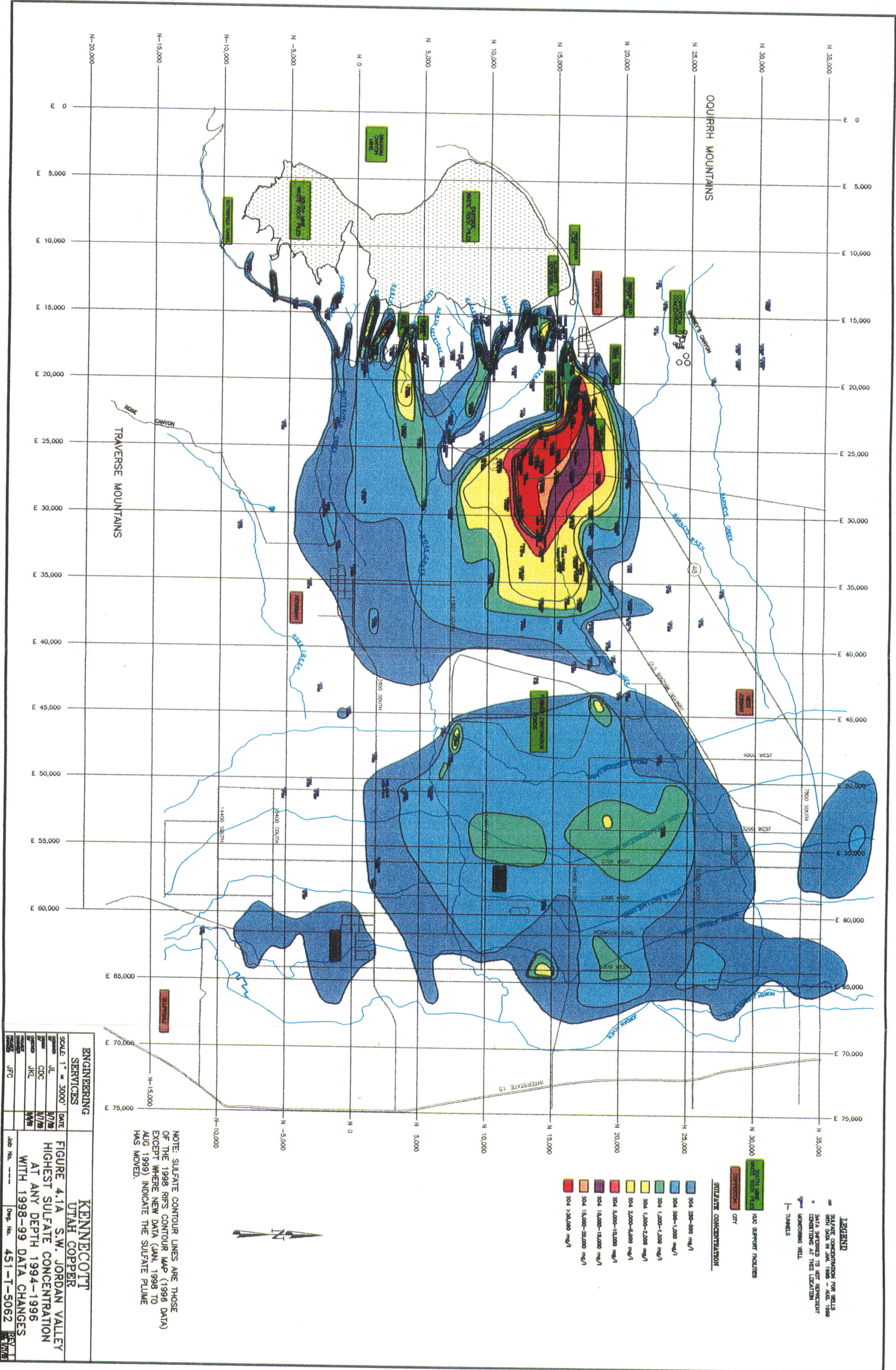
5.1 General

The physical facilities of the proposed project are described in the conceptual design report by CDM, which is attached to this proposal. That report provides substantial detail regarding extraction, treatment process, pipelines, water treatment plants, treated water delivery locations and concentrate disposal provisions.

The proposed project facilities are divided into Zone A and Zone B facilities. The CDM conceptual design report explains the cost-effective reasons for this segregation.

5.2 Groundwater Extraction

Groundwater extraction for treatment will involve existing KUCC extraction wells 1193 and 109 in Zone A, and new extraction wells B1 through B8 in Zone B, as shown in Figure 5.2A (and in Figure 5-9 in the CDM report). Table 5.2A shows the average annual volumes of groundwater extraction from these wells. Table 2-1 in the CDM report gives more information on each well. These extractions will provide sufficient feed water to membrane



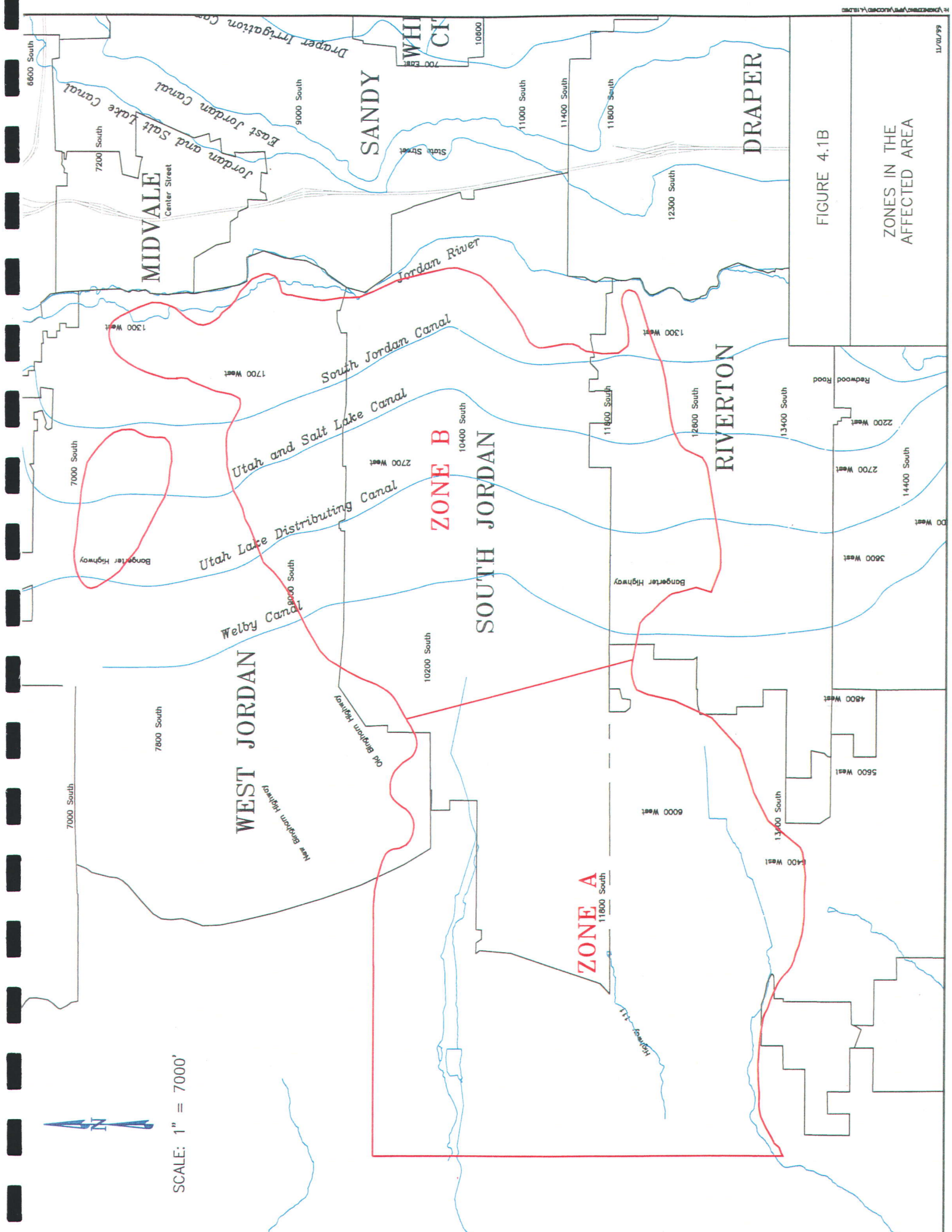


FIGURE 4.1B

ZONES IN THE
AFFECTED AREA

process water treatment plants to provide for 7,000 AF annually of treated water from the deep, principal aquifer.

New wells SW1 through SW4 are additional shallow wells that will extract 3,000 AF annually from the shallow aquifer zone, that lies above the deeper principal aquifer in areas just west of the Jordan River. This will provide an additional component of the project to "restore or replace" the lost part of groundwater in the Affected Area, that is, loss of concentrate stream from the treatment process. Table 5.2A tabulates the average annual extractions from these wells. The annual extraction volumes from individual shallow and deep wells may vary, based upon operating experience that will be gained by KUCC and JWWCD.

TABLE 5.2A
Annual Groundwater Extraction Volumes

Wells	Annual Extraction (AF)
Zone A (wells 1193 and 109)	4500
Zone B (wells B1-B8)	4200
Shallow Wells SW1-SW4	3000
	11,700 AF

Additional extractions will be made by KUCC. These extractions will serve to contain and contract critical portions of the acid and highly elevated sulfate plume. KUCC will continue to operate its acid plume extraction well, which will extract at least a rolling average of 400 AF on an annual basis over a five year period to reduce the contamination in this area. KUCC will also operate well LTG1147, its "sulfate extraction well" north of Herriman. This will contain and contract the Lark plume area. These wells are also shown on Figure 5.2A. Some portion of these extractions may be used as feed water for the Zone A treatment plant.

5.3 Collection Pipelines

Collection pipelines ranging in diameter from 6 inches to 16 inches will collect extracted water from project extraction wells, and convey that feed water to Zone A and Zone B treatment plants. Collection pipelines for Zones A and B are shown in Figure 5-5 of the CDM report. Collection pipelines for the four shallow wells located in Zone B are shown in Figure 5-8 of the CDM report.

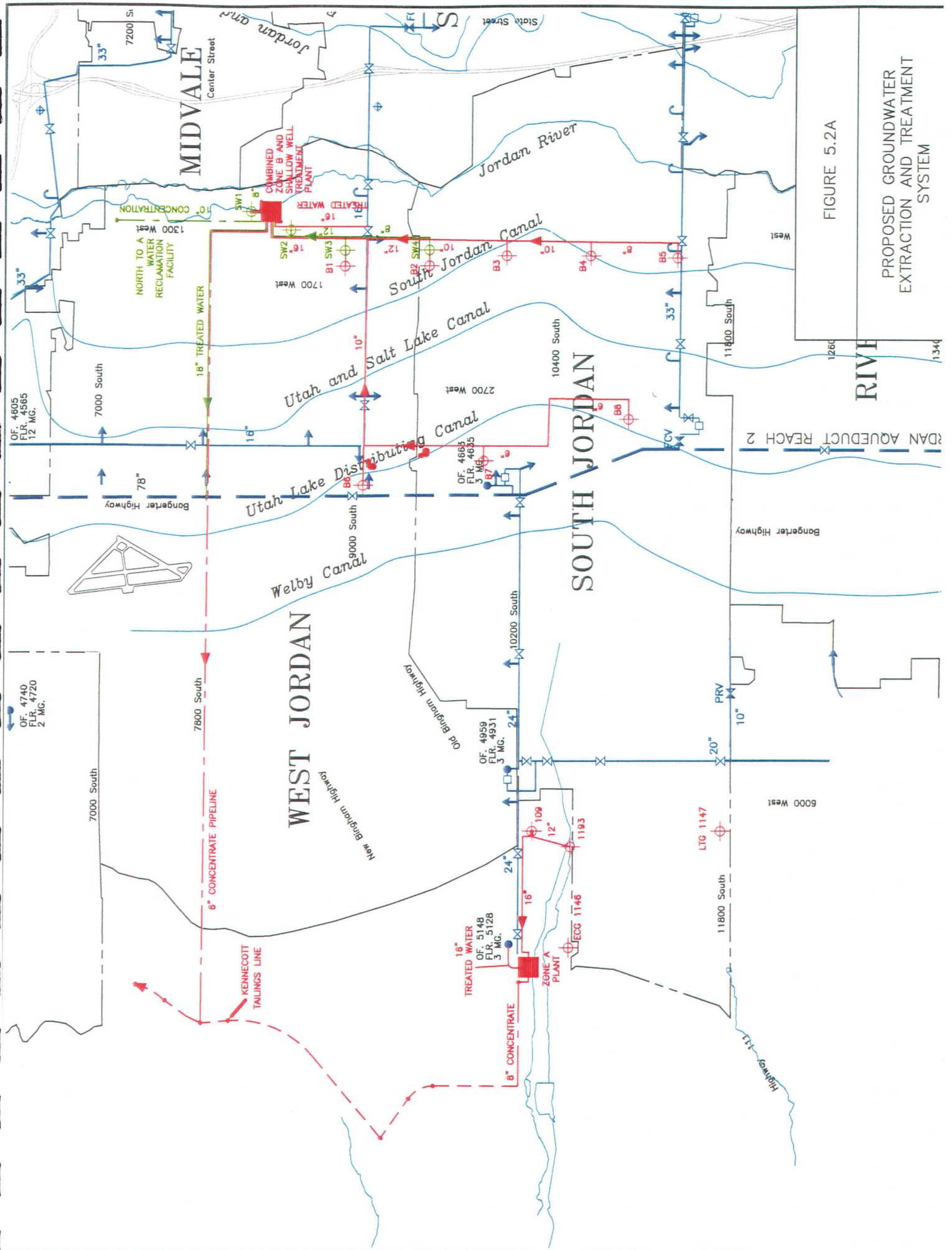


FIGURE 5.2A

PROPOSED GROUNDWATER
EXTRACTION AND TREATMENT
SYSTEM

5.4 Water Treatment Plants

CDM has evaluated the treatment process required to produce municipal quality water from groundwater in the Affected Area. The membrane process known as reverse osmosis has been selected by CDM. CDM has outlined this treatment process performance in section 3 of their report, to produce municipal quality water with a total dissolved solids (TDS) concentration of 250 mg/L.

Two water treatment plants are proposed. Figure 5-5 in the CDM report shows the Zone A plant, located near 7000 West 10200 South, and the Zone B plant located at 8300 South 1000 West. The Zone A plant will be constructed on land owned by KUCC. The Zone B plant will be constructed on land owned by JVWCD. The location of the Zone A plant may be modified by KUCC to optimize treatment and conveyance and reduce costs.

The Jordan River/shallow wells component of the project will involve a common treatment plant with the Zone B plant. This is shown on Figure 5-8 of the CDM report.

CDM has prepared site layouts and preliminary treatment plant designs for the Zones A and B plants. These are shown in Figures 5-10, 5-11 and 5-12 of the CDM report.

Section 3 of the CDM report fully explains the treatment process parameters and characteristics of the Zones A and B treatment plants, including the shallow wells component. These plant conditions are summarized in Table 5.4A. Abbreviations in this table include acre-feet per year (AF/yr) and million gallons per day (MGD).

Table 5.4A

Treatment Process	Feedwater		Product (Treated) Water	
	(AF/yr)	(MGD)	(AF/yr)	(MGD)
Zone A	4500	4.46	3500	3.46
Zone B	4200	4.06	3500	3.46
Shallow Wells	3000	3.0	2300	2.3

5.5 Treated Water Deliveries

The two treatment plants are located within the service area of JVVCD treated water conveyance infrastructure. The discharge of treated water to the JVVCD system is shown in Figures 5-5 and 5-8 of the CDM report.

The Zone A treatment plant will produce water at a relatively high elevation, in JVVCD's pressure Zone C or higher. This plant will produce water that will be conveyed to JVVCD's Zone C reservoir, at an elevation of 5,150 feet above sea level, at 7000 West 10200 South. This will be a substantial benefit to the public in the Affected Area, by receiving treated water at a high elevation to allow for westward land development.

The Zone B treated water will be conveyed southward to the JVVCD 16-inch transmission pipeline along 9000 South. As an alternative, it may be conveyed northward to the JVVCD 33-inch cross valley transmission pipeline at 6400 South. Either location will provide water to the public in the Affected Area, as well as to other JVVCD member agencies.

5.6 Concentrate Disposal

KUCC proposes to use its existing tailings slurry conveyance pipeline, from Bingham Canyon to the Magna tailings pond, for conveyance of concentrate from the Zone A and B treatment plants. It is anticipated that the much greater flow of KUCC tailings slurry in this pipeline will serve to stabilize the corrosive and precipitating nature of the project concentrate streams (see Table 5.6A). Disposal in the KUCC tailings pond will simplify discharge permitting issues. The tailings pond is subject to a UPDES and State of Utah groundwater permit, and KUCC will continue to be responsible for meeting discharge requirements from the impoundment. If any aspect of this approach (e.g., transporting the concentrate in the tailings line) becomes infeasible for any reason, an alternative approach will be required.

Table 5.6A
Effect of RO Concentrate on Tailings Line Chemistry

Parameter	Tailings Line	RO Discharge	Composite Flow	Net Change (%)
SO ₄	3050	4736	3115	2.13
TDS	9030	10,259	9077	0.52
pH	7.2	7.7	7.2	0.24
Ca	873	1853	911	4.32
Cl	3160	1547	3098	-1.96
K	120	27	116	-2.97
Mg	363	1080	369	1.63
Na	2010	508	1952	-2.87

Notes:

All values in mg/L except pH.

Tailings water flow, 27,000 gpm.

RO concentrate flow, 1080 gpm.

Range of tailings concentrations typically $\pm 20\%$.

Table 5.6A indicates that the change in chemistry in the tailings water due to addition of the RO concentrate is very small, within the range of typical variability of the tailings water quality. Therefore, it is unlikely that this addition will change the characteristics of the tailings discharge significantly.

Section 3 of the CDM report fully explains the recovery rate of the reverse osmosis treatment processes, and the concentrate streams. In summary, they will be as shown in Table 5.6B:

Table 5.6B

<u>Treatment Process</u>	<u>Concentrate Flow Rate (MGD)</u>	<u>Concentrate Discharge Location</u>
Zone A	1.0	KUCC tailings pipeline (to Magna tailings pond)
Zone B	0.6	KUCC tailing pipeline (to Magna tailings pond)
Shallow Wells	0.6	Co-discharge with a water reclamation facility (to Jordan River)

The concentrate stream resulting from the shallow wells component of the project will be extended northward, to the location of a water reclamation facility. This concentrate will be proposed to the Utah Division of Water Quality as a co-discharge at the water reclamation facility effluent outfall to the Jordan River. The co-discharge is proposed to occur within, or adjacent to, the outfall pipe from the water reclamation facility. The combination of the water reclamation facility effluent and the concentrate stream will meet Jordan River water quality parameters, including a class 4 TDS limitation of 1200 mg/L.

The potential water reclamation facility discharge locations are South Valley Water Reclamation Facility (SVWRF) and Central Valley Water Reclamation Facility (CVWRF). The more desirable co-discharge location is SVWRF, due to its proximity to the Zone B treatment plant site. To provide more definition to the proposed co-discharge, Table 5.6C tabulates the range of projected concentrate quality, based on a range of recovery rates from 76% to 85%.

Table 5.6C
Shallow Groundwater Projected Concentrate Quality^(a)

<u>Parameter</u>	<u>Units</u>	<u>76% Recovery</u>	<u>85% Recovery</u>
Calcium	mg/L	530	840
Magnesium	mg/L	210	330
Sodium	mg/L	490	780
Potassium	mg/L	29	45
Strontium	mg/L	2.8	4.5
Barium	mg/L	0.08	0.13
Iron	mg/L	0.00	0.00
Manganese	mg/L	0.00	0.00
Carbonate	mg/L	0.38	0.61
Bicarbonate	mg/L	1,260	2,000
Sulfate	mg/L	1,240	1,980
Chloride	mg/L	910	1,440
Nitrate	mg/L	12	18
Silica	mg/L	150	230
Carbon dioxide	mg/L	150	150
TDS	mg/L	4,200	6,650
pH		7.2	7.4
Hardness	mg/L as CaCO ₃	2,180	3,470
LSI		+1.27	+1.87

^(a) Assumes treatment using TFC ULP-T membrane, at 15 gfd

The range of effluent flow rates and TDS concentrations of SVWRF and CVWRF are shown in Table 5.6D.

Table 5.6D
Water Reclamation Facility Flow Rates and TDS

Water Reclamation Facility	Parameter	Units	Max.	Min.	Average
SVWRF	Effluent flow ^(a)	mgd	27.3	24.2	25.7
CVWRF	Effluent flow ^(b)	mgd	N/A	N/A	60
SVWRF	TDS ^(c)	mg/L	1094	870	982
CVWRF	TDS ^(c)	mg/L	768	704	739

Notes

^(a) 1999 monthly averages, from SVWRF records

^(b) Estimate, from conversation with CVWRF

^(c) From 1993-1994 JVWCD measurements

Based upon the information shown in Table 5.6D, together with the following assumptions, Table 5.6E shows the combined average TDS concentrations that would result from the proposed co-discharge of shallow groundwater concentrate with sewage effluent.

Assumptions:

- a. Shallow groundwater feedwater rate = 4.0 mgd;
- b. 21% blend (bypass) of feedwater;
- c. Recovery rates of 76% or 85%, with qualities as shown in Table 5.6C; and
- d. Use averages from Table 5.6D.

Table 5.6E
Combined TDS Resulting from Co-Discharge

<u>Co-Discharge At:</u>	<u>Membrane Process Recovery Rate</u>	<u>Concentrate Flow Rate (mgd)</u>	<u>Combined Co- Discharge TDS (mg/L)</u>
SVWRF	76%	0.8	1079
	85%	0.6	1111
CVWRF	76%	0.8	785
	85%	0.6	798

Table 5.6E shows that the proposed shallow groundwater concentrate co-discharge at either water reclamation facility would meet the State class 4 limit of 1200 mg/L TDS for the Jordan River.

Certain assumptions concerning disposal of concentrate were made in reaching the NRD settlement and in developing this Proposal. KUCC and JVWCD will require sufficient flexibility to address this issue if the assumptions cease to be viable. Those assumptions are:

- a. The concentrate streams from the Zone A and Zone B treatment plants can be managed and transported in the tailings disposal pipeline operated by KUCC. The concentrate would then be disposed in KUCC's tailings impoundment and any water decanted from the concentrate stream would be disposed or handled in accordance with KUCC's UPDES and groundwater permits.
- b. Effluent limits for the discharge of this effluent would not be any more stringent than KUCC's soon-to-be-issued UPDES permit.
- c. Direct discharge of the concentrate streams to the Great Salt Lake will be permitted at such time as KUCC's tailings operation closes or prior to that time if the concentrate streams cannot be managed within the tailings disposal system for any reason.
- d. The co-discharge of concentrate from treatment of shallow wells SW-1 through SW-4 will be permitted at a water reclamation facility, provided the combined discharge TDS limit of 1200 mg/L is met, together with other pertinent discharge limits.

6. GROUNDWATER IMPACTS AND REMEDIATION

6.1 Groundwater Modeling

Flow Model. KUCC developed a groundwater model of the southwestern Jordan Valley (SWJV) as part of the RI/FS to analyze flow paths and groundwater velocities in the principal aquifer and to evaluate remedial options. The model area extends from the bedrock/alluvial interface at the base of the Oquirrh Mountains on the west, to the bedrock/alluvial interface at the base of the Wasatch Mountains on the east, and from approximately 6000 South on the north to the base of the Traverse Mountains on the south. A more complete description of this model is included in Appendix A. The model calibration closely simulated observed aquifer conditions in the SWJV.

Transport Model. KUCC's calibrated groundwater flow model was then coupled with a contaminant transport code to model historical and future migration of storm and mine waste water that leaked from the former Bingham Creek reservoir. This model combines groundwater flow with the physical aspects of contaminant transport including advection, dispersion and chemical reactions. The transport model was calibrated to observed 1996-1997 sulfate concentrations down gradient of the former Bingham Creek reservoirs. Calibration was achieved by finding a set of transport parameters (i.e., retardation, dispersivity and porosity) within an accepted range that reasonably reproduced field-measured concentrations. The model is believed to be a reasonable first approximation of the kinematics of the Bingham Creek and former evaporation ponds plumes and allows the feasibility of various remedial strategies to be tested. A complete description of the model is included in Appendix A.

6.2 Hydrogeology

Groundwater Recharge. The principal aquifer is recharged from surface infiltration of precipitation, irrigation water and canal water, bedrock inflow, and to a limited extent from surface infiltration of waters emanating from Butterfield Creek. The bedrock of the Oquirrh Mountains provides recharge to the groundwater in the western part of the SWJV, and this groundwater then travels eastward into the basin. Aquifer recharge is greater in the eastern part of the SWJV and in the Herriman area due to recharge from surface water.

Groundwater Extraction. Most of the water extracted from the principal aquifer is used for municipal or industrial purposes. A summary of recent extractions is included in Appendix B.

Groundwater Elevation Changes. The average depth below ground surface to the potentiometric surface of the principal aquifer in the SWJV is about 235 feet. Groundwater flow is predominantly west to east from the base of the Oquirrh Mountains to the Jordan River. Groundwater elevations declined substantially throughout the SWJV from 1986 to 1996. The Affected Area is included within SWJV. A noteworthy area of decline is in the region of the West Jordan City well field, to the north of the Affected Area. A description of recent groundwater elevation changes is included in Appendix B.

Groundwater Velocity. Average horizontal groundwater velocities have been estimated by KUCC to be about 550 feet per year. Isotopic analyses were conducted by KUCC to confirm this estimate. These analyses yielded a linear groundwater velocity estimate of 500-650 feet per year. A more complete discussion of these estimates and analyses is included in Appendix B.

6.3 Plume Contraction and Containment

Using the groundwater flow and transport models, predictions have been made by KUCC regarding the disposition of sulfate under various extraction scenarios. Appendix C provides detailed information regarding these scenarios and the results.

Two cases were investigated in the region between KUCC production wells 109 and 1193 and the West Jordan municipal well field: one with groundwater injection and one without injection. West Jordan City well field pumping rates of 3,000 acre-feet per year and 4,000 acre-feet per year were evaluated.

These modeling runs suggest that the ideal environment for sulfate containment and restoration of the aquifer involve West Jordan City limiting its well field pumping to 3,000 afy. This is close to the sustained yield of the aquifer in that area. KUCC also proposes to inject clean water between the sulfate extraction zone and the West Jordan municipal well field. KUCC and West Jordan are continuing to work together to optimize extraction rates. KUCC plans to meet further with UDEQ to address issues and concerns about its proposed injection wells.

The modeling runs suggest that the proposed containment and extraction system will be effective at keeping elevated sulfate (> 1500 mg/L) on KUCC property near the sulfate extraction wells in Zone A. It also reduces sulfate concentrations throughout Zones A and B in the Affected Area.

7. WATER RIGHTS AND PROPOSAL TO THE STATE ENGINEER FOR MANAGEMENT OF WATER RIGHTS WITHIN THE AFFECTED AREA

7.1 Consent Decree Requirements

The Consent Decree states that "allocation of the right to use surface or groundwater resources by the public shall be by the Utah State Engineer pursuant to Utah water law." In order to obtain a credit against the ILC, the Consent Decree requires that groundwater be treated to municipal quality, and provided to M&I water purveyors. It anticipates that municipal water rights will be used for project groundwater extractions.

7.2 Water Rights in the Affected Area

Appendix D tabulates all groundwater rights in the Utah Division of Water Rights database that lie within the Affected Area, as shown in Figure 4.1A. Various agricultural, stock watering, domestic and industrial water rights exist. The only water rights currently approved for municipal use in the Affected Area are shown in Table 7.2A and in Figure 7.2A:

TABLE 7.2A

Water Right Number	Owner	Priority Date	Flow Rate (cfs)	Potential Annual Withdrawal (AF)
59-1210	JVWCD	1955	3.55	850
59-1536	JVWCD	1959	5.0	3613
59-1572	West Jordan City	1960	1.0	723
59-1533	Riverton City	1959	1.25 ^(a)	903

^(a) One of four points of diversion lies within the Affected Area

Some noteworthy industrial water rights belong to KUCC, for pumping of their process production wells 1193 and 109, as follows:

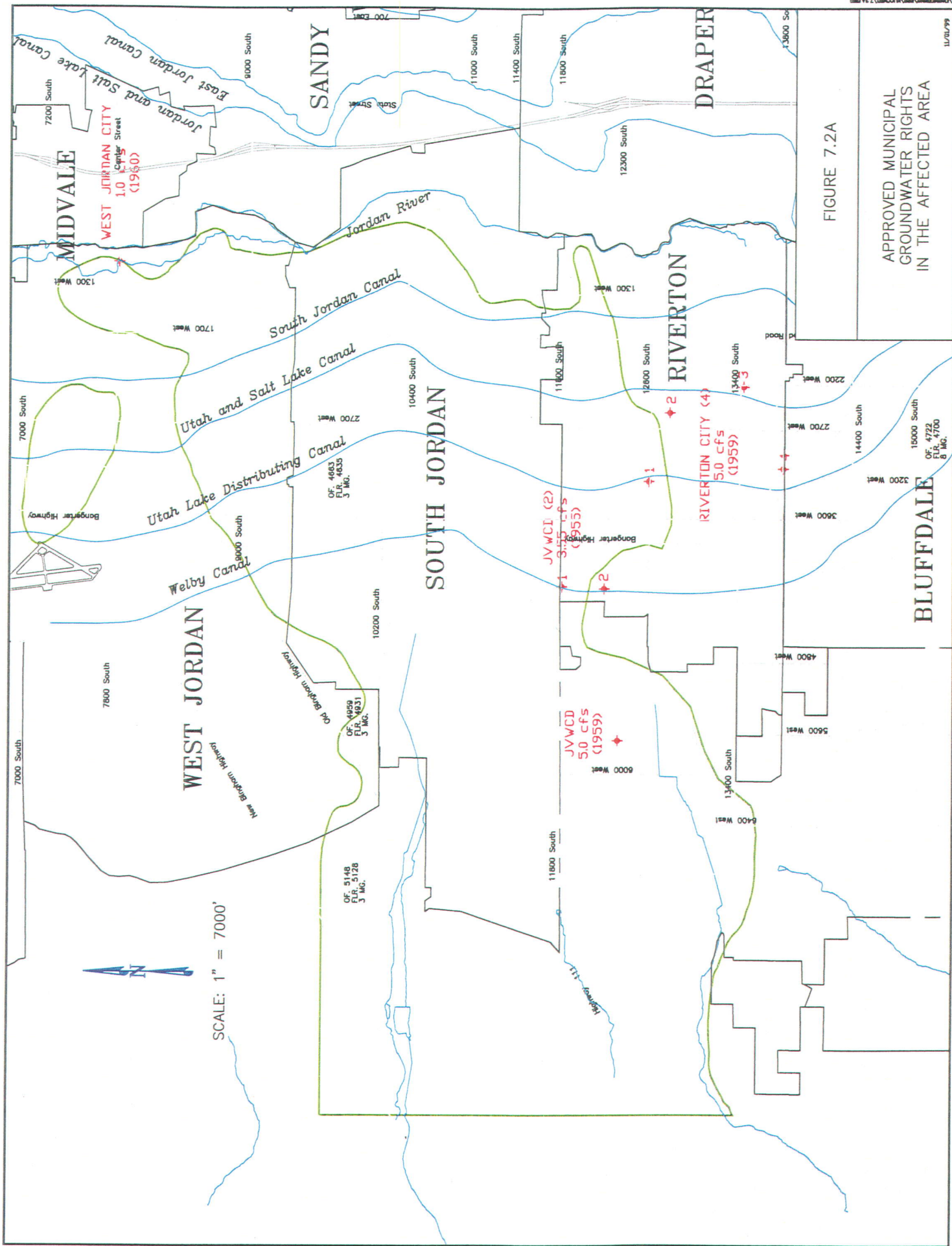


TABLE 7.2B

Water Right Number	Owner	Priority Date	Flow Rate (cfs)	Potential Annual Withdrawal (AF)
59-1653	KUCC	1961	4.0	2890
59-1042	KUCC	1962	4.44	3209

JVWCD also has pending change applications for shallow groundwater rights near the Jordan River in the Affected Area. These are based upon the following change application numbers:

TABLE 7.2C

Water Right Number	Underlying Water Right Owner	Priority Date	Flow Rate (cfs)	Potential Annual Withdrawal (AF)
57-5513 (a23590)	JVWCD	1870	11.78	5000
59-5619 (a23711)	Utah & Salt Lake Canal Company	1870	15.48	2882
59-3500 (a23622)	South Jordan Canal Company	1870	5.77	1205
59-5622 (a23863)	WJWUC/East Jordan Irrigation Company	1870	16.85	4797

These water rights have underlying Utah Lake and/or Jordan River rights of early priority dates. JVWCD anticipates that the State Engineer will approve these rights for operation of shallow aquifer wells.

7.3 Proposed Change Applications for the Project

The following water rights are proposed for extraction wells in Zones A and B of the proposed project:

TABLE 7.3A

Water Right Number	Owner	Annual Volume (AF)	Zone	Extraction Wells
59-1210	JVWCD	850	B	B6-8
59-1536	JVWCD	3350	B	B1-8
59-1653 ^(a)	KUCC	2300	A	1193
59-1042 ^(a)	KUCC	2300	A	109
57-5513	JVWCD	3000	B	SW1-4

^(a) To be converted to municipal rights and transferred to JVWCD.

The Kennecott groundwater rights will be converted to municipal use initially. After KUCC operates the Zone A treatment plant for approximately five years, to reach stability in the treatment process, the groundwater rights will be transferred to JVWCD.

7.4 Proposal to the State Engineer Concerning Water Rights

In August 1999, KUCC proposed to the State Engineer (see Appendix F) that certain restrictions be placed on future water development in the southwestern Jordan Valley to facilitate the NRD remedial process proposed here and to prevent further migration of existing contamination. These restrictions included:

- a. Completion depth and pumping rate restrictions on wells drilled within 3,000 feet south of the known 250 mg/L sulfate isoconcentration line in the Herriman area, as shown on Figure 4.1A.
- b. Completion depth and pumping rate restrictions on wells drilled within 3,000 feet north of the known 250 mg/L sulfate isoconcentration line in the West Jordan area, as shown on the same figure.
- c. Prohibition of new well development within the 250 mg/L sulfate isoconcentration line in the former KUCC evaporation pond area (South Jordan) until Kennecott installs its NRD remediation and water supply and treatment systems, achieves hydraulic containment of the upgradient groundwater plume, and the system reaches steady state and achieves a sulfate level in the area below 250 mg/L.

Appropriate completion depths and pumping rates would be determined on a case-by-case basis using the most up-to-date information on location and depth of contamination, aquifer properties, and user needs. KUCC would supply this information to the State Engineer and any water user upon request. The restricted area will shrink as remediation and natural attenuation reduce the size of the contaminated zone.

KUCC is committed to assist affected property owners in obtaining an adequate water supply by identifying alternative water sources, providing technical assistance in siting and completing of supply wells, and providing supplemental financing in cases where the presence of contamination causes an additional cost burden to the property owner.

8. COST ESTIMATES

8.1 Capital Costs for Deep Groundwater Extractions

This is the base project that was specifically contemplated by the State NRD Consent Decree. The CDM conceptual design report includes extensive documentation and tables showing capital cost estimates for this portion of the project in Zones A and B. In summary, Table 7-2 (in the CDM report) shows these capital cost estimates. The total capital cost estimate is \$29.67 million, based upon a 10% contingency estimate.

8.2 Capital Cost Estimates for Shallow Groundwater Extraction

This is a project enhancement feature proposed by JWCD, and endorsed by KUCC. The capital costs are explained fully in the CDM conceptual design report. Table 7-2 summarizes those capital costs. The total cost estimate is \$7.32 million, based upon a 10% contingency estimate.

8.3 Operation, Maintenance and Replacement Costs

The CDM conceptual design report fully explains the estimates for operation, maintenance and replacement (O, M&R) costs. The CDM report also estimates the net present value of these costs. Table 7-2 summarizes the annual O, M&R costs, and shows their net present value, based upon 50 years of operation.

8.4 Avoided Capital Costs

The NRD Trust Fund was created to address contamination of groundwater that might otherwise have been developed for municipal purposes by municipal water purveyors. The Consent Decree contemplates that the water purveyor(s) receiving the Trust Fund benefits would pay its avoided cost of

developing groundwater, without contamination. This is referred to as "cost of development without contamination" in Attachment 16 of the Consent Decree.

JVWCD has performed a more detailed estimate of this avoided capital cost of development without contamination than is available in the Consent Decree. Figure 8.4A shows the location of four wells that would have been developed by JVWCD if contamination had not been present. The location of JVWCD transmission pipelines, pump station and reservoir facilities throughout the Affected Area would have made this an efficient endeavor.

Table 8.4A lists the assumptions, and provides the details for the avoided capital cost estimate. The estimated avoided capital cost is \$2.8 million.

8.5 Avoided Operating Costs

The Consent Decree (article V.D.2.b.i.) requires that avoided operating costs for groundwater development without contamination be paid to KUCC toward a KUCC-proposed project funded from the Trust Fund. These avoided operating costs are to be paid by the benefitting water purveyor(s). The Consent Decree sets this cost at \$49/AF in 1995 dollars. This cost is to escalate in accordance with the ENR "20 cities" cost index.

JVWCD has calculated the net present value of this operating cost contribution for a 50 year period, assuming a 7% discount rate. The net present value is \$4.7 million (in 1999 dollars), and \$4.9 million (in 2000 dollars), as shown in Table 9.0A.

8.6 Total Cost Estimate

The total cost of the proposed project, including capital costs and net present value for 50 years of O, M&R costs is shown in CDM's Table 7-2, and in the following Table 8.6A. The total net present cost, in 1999 dollars, is \$65.14 million, based upon a 10% contingency estimate. These total project costs do not include additional capital and O, M&R costs that KUCC will provide in industrial pretreatment of Zone A water to allow for the conventional reverse osmosis treatment of Zone A water described in this project. Also not included are Zone A operating costs related to CERCLA response actions beyond 50 years that KUCC will provide.

9. PROJECT FUNDING

KUCC and JVWCD propose to share in funding the proposed project, together with funds from the NRD Trust Fund. Table 9.0A lists the funding proposed by KUCC and JVWCD. It is proposed that the State Trustee transfer the entire amount of the

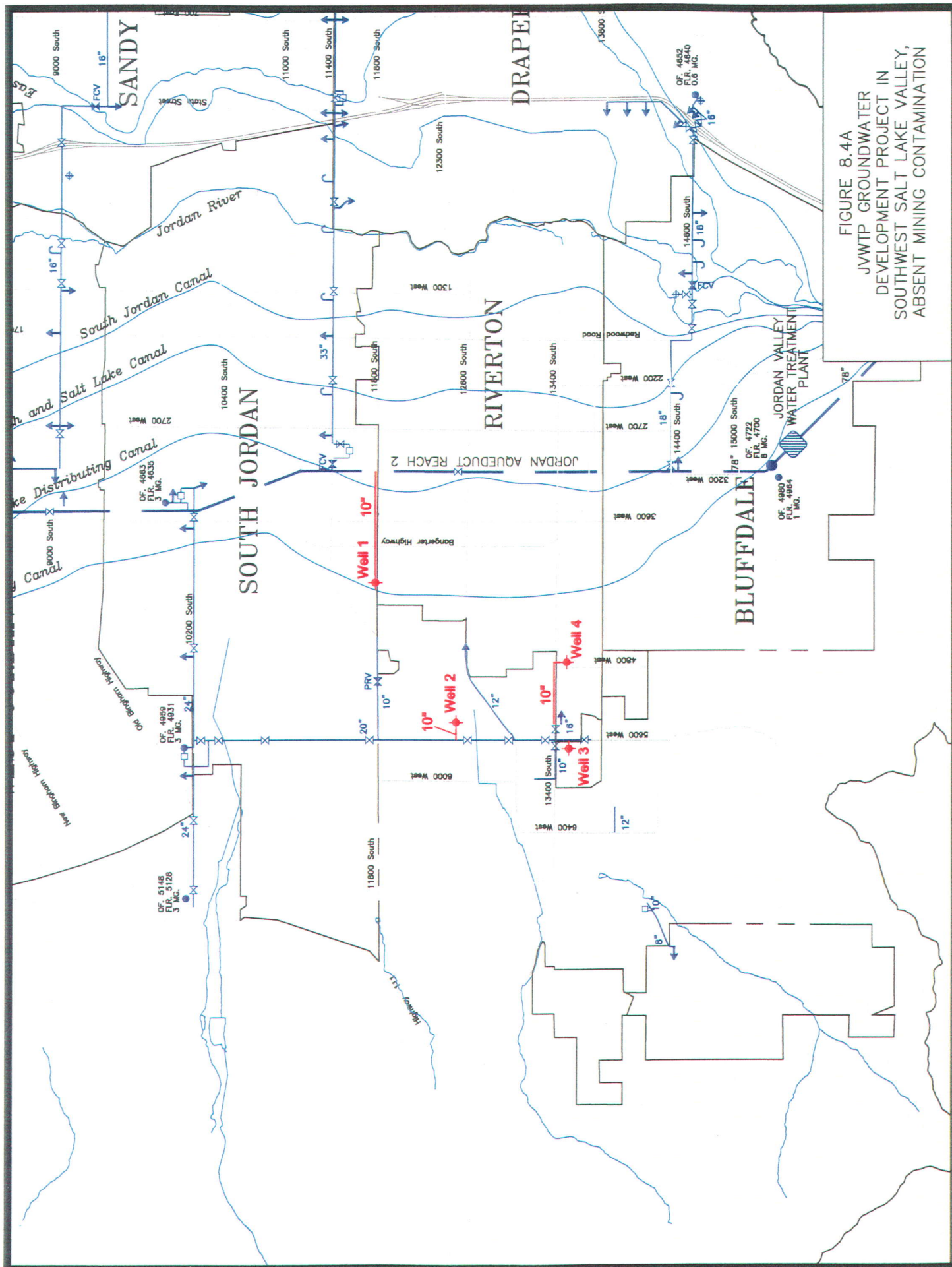


FIGURE 8.4A
JWTP GROUNDWATER
DEVELOPMENT PROJECT IN
SOUTHWEST SALT LAKE VALLEY,
ABSENT MINING CONTAMINATION

TABLE 8.4A

**Estimate for Avoided JWCD Capital Cost of
Groundwater Development, Absent Mining Contamination**

September 1, 1999

1. **Assumptions:**
 - 7000 AF per year extraction
 - Constant flow over 330 days per year (this is equivalent to flow pattern from NRD project)
 - Total flow rate = 10.7 cfs
 - 4 wells, each at average flow rate of 2.7 cfs (1200 gpm)
 - Average well depth of 700 feet
 - Brick pump building and site improvements/landscaping at each well
 - Discharge to existing JWCD transmission system
2. **Facilities:**
(See Figure 8.4A)
3. **Cost Estimates:**
 - Pipelines:
16,500 LF 10" PVC pipe at \$4.0/LF = \$66,000
 - Well Drilling:
(Compare with 1997 1159 East 4500 South drilling costs, plus 8%)

Typical Well:

Mobilize/Demobilize	1 LS	\$27,000
Special conditions	1 LS	\$6,480
Conductor casing	120 LF @ \$223	\$26,760
Drill 24" borehole	580 LF @ \$59.40	\$34,452
Geophysical logging	1 LS	\$2,700
Caliper survey	1 LS	\$1,080
Well installation:		
- 16" steel casing	500 LF @ \$41.28	\$20,640
- 16" well screen	200 LF @ \$183.34	\$36,668
- 2" gravel feed tube	300 LF @ \$4.32	\$1,296
Install gravel pack	500 LF @ \$32.40	\$16,200
Install annular grout seal	200 LF @ \$40.42	\$8,084
Initial well development	40 hr @ \$243	\$9,720
Install test pump	1 LS	\$4,235
Well development pumping	40 hr @ \$135	\$5,400
Well pump testing	34 hr @ \$135	\$4,590

Table 8.4A (continued)

Video camera survey	1 LS	\$1,945
Plumbeus/alignment testing	1 LS	\$1,080
Disinfection/capping	1 LS	\$1,570
Fluids/cuttings disposal	1 LS	\$2,700
Total for typical well:		\$212,600

- Pump building and site improvements:
(Compare with 1998-1999 1159 East 4500 South well construction costs, plus 4%):

Land purchase	\$50,000
Mobilize/demobilize	\$15,060
Site improvements	\$15,000
Landscaping/irrigation system	\$20,800
Yard piping/structures	\$6,100
Pump building/architecture	\$43,420
Pump station mechanical	\$41,260
Supply/install pump/motor	\$41,800
Electrical systems	\$28,680
Instrumentation/controls	\$9,500
JVWCD RTU	\$12,000
Change orders	\$6,000
Total for typical well:	\$289,620

4. **Summary of costs:**

Pipelines	\$66,000
Well drilling (4 wells)	\$850,400
Well equipping (4 wells)	\$1,158,480
	Subtotal:
	\$2,074,880
Engineering @ 25%	\$518,720
Contingency @ 10%	\$507,488
	Total Cost Estimate (rounded):
	\$2,801,000

Table 8.6A

Present Worth Costs of Proposed Project

Facility	Capital Costs	Annual O&M Costs	O&M Present Costs	Replacement Present Costs	Total Present Costs
Costs Based on a 40% Contingency					
Zone A RO Facility at 10200 South	\$13,010,000	\$810,000	\$10,560,000	\$1,130,000	\$24,700,000
JVWCD Enhancement to Zone A	\$380,000	\$40,000	\$460,000	\$70,000	\$910,000
Zone B RO Facility at 8200 South	\$21,430,000	\$710,000	\$9,290,000	\$1,190,000	\$31,910,000
Shallow Wells at 8200 South	\$9,040,000	N/A	N/A	N/A	\$9,040,000
JVWCD Shallow Wells	N/A	\$260,000	\$3,430,000	\$820,000	\$4,250,000
JVWCD Enhancement for Zone B	\$1,920,000	\$120,000	\$1,580,000	\$220,000	\$3,720,000
Total Project Costs	\$45,780,000	\$1,940,000	\$25,320,000	\$3,430,000	\$74,530,000
Costs Based on a 10% Contingency					
Zone A RO Facility at 10200 South	\$10,580,000	\$810,000	\$10,560,000	\$920,000	\$22,060,000
JVWCD Enhancement for Zone A	\$310,000	\$40,000	\$460,000	\$60,000	\$830,000
Zone B RO Facility at 8200 South	\$17,230,000	\$710,000	\$9,290,000	\$980,000	\$27,500,000
Shallow Wells at 8200 South	\$7,320,000	N/A	N/A	N/A	\$7,320,000
JVWCD Shallow Wells	N/A	\$260,000	\$3,430,000	\$680,000	\$4,110,000
JVWCD Enhancement for Zone B	\$1,550,000	\$120,000	\$1,580,000	\$180,000	\$3,310,000
Total Project Costs	\$36,990,000	\$1,940,000	\$25,320,000	\$2,820,000	\$65,130,000

TABLE 9.0A

Total Project Present Worth Costs
(Based on 10% Contingency, July 2000 Dollars^(a), 50 Years Operation)

September 1999

Facility	Capital Costs	O&M Present Costs	Replacement Present Costs	Total Present Costs	Funding Source		
					Trust Fund	JVWCD	KUCC
Zone A							
- Pretreatment/water quality management	\$127,000,000	\$26,343,000	\$2,291,000	\$155,634,000			\$155,634,000
- Acid plume well	\$1,400,000	\$3,429,000	\$126,000	\$4,955,000			\$4,955,000
- Sulfate extraction well	\$650,000	\$2,576,000	\$58,000	\$3,284,000			\$3,284,000
- RO facility at 10200 South	\$10,897,000	\$10,876,000	\$948,000	\$22,721,000	\$21,365,000	\$1,357,000 ^(b)	
- JVWCD process enhancement	\$319,000	\$474,000	\$62,000	\$855,000		\$855,000	
Zone B							
- RO facility at 8200 South	\$17,747,000	\$9,569,000	\$1,009,000	\$28,325,000	\$21,365,000	\$1,528,000 ^(b) \$4,876,000 ^(c)	\$556,000
- JVWCD process enhancement	\$1,597,000	\$1,627,000	\$185,000	\$3,409,000		\$3,409,000	
Subtotal, Zones A and B	\$159,610,000	\$54,894,000	\$4,679,000	\$219,183,000	\$42,730,000	\$12,025,000	\$164,429,000

Facility	Capital Costs	O&M Present Costs	Replacement Present Costs	Total Present Costs	Funding Source		
					Trust Fund	JVWCD	KUCC
JVWCD Utah Lake/Jordan River Component							
- Shallow wells/RO facility at 8200 South	\$7,540,000	\$3,533,000	\$700,000	\$11,773,000	\$7,371,000 ^(d)	\$4,402,000 ^(d)	^(f)
Trustee Management of Assets	\$657,000			\$657,000	\$657,000		
TOTALS	\$167,807,000	\$58,427,000	\$5,379,000	\$231,613,000	\$50,758,000	\$16,427,000	\$164,429,000
TOTALS BY TRUST FUND	\$33,231,000	\$15,569,000	\$1,957,000		\$50,758,000		
TOTALS BY JVWCD	\$4,970,000	\$10,510,000	\$947,000			\$16,427,000	
TOTALS BY KUCC	\$129,606,000	\$32,348,000	\$2,475,000	\$231,613,000	\$0	\$0	\$164,429,000
Notes: ^(a) July 2000 dollars are estimated by multiplying CDM and JVWCD estimates from CDM Table 7-2 and JVWCD/KUCC Table 15.0 by 1.03 ^(b) Part of JVWCD avoided capital cost for groundwater development of 7,000 AF without contamination (\$2,885,000) ^(c) JVWCD avoided O&M cost for groundwater development of 7,000 AF without contamination (\$4,876,000) ^(d) Trust Fund to pay most of capital cost, to extent of "cost of lost use" funds by July 2000 ^(e) JVWCD to pay O,M&R costs, and remainder of capital not paid by Trust Fund ^(f) Underlying water right was previously transferred to JVWCD by KUCC							

Trust Fund, less State expenses in administration, to KUCC and JWWCD for accomplishing the proposed project. This transfer would be done in two stages, as described in Table 12.1A.

In addition to the capital, operating, maintenance and replacement costs contributed by KUCC and JWWCD, as shown in Table 9.0A, the following contributions of land and assets currently owned by KUCC and JWWCD will be made to the project:

- Zone A treatment plant site - contributed by KUCC
- Zone A pretreatment facilities - by KUCC
- Wells 1193 and 109 - wells and sites by KUCC
- Water rights for wells 1193 and 109 by KUCC
- Zone B treatment plant site - by JWWCD
- Extraction wells SW1 and SW2 - land, plus well SW1, by JWWCD
- Water rights for wells B1-8 and SW1-4 - by JWWCD.

Additional in-kind contributions that will be made to the project by KUCC include:

- Use of its slurry pipeline for concentrate disposal
- Acid plume well facilities and O, M&R
- Sulfate extraction well facilities and O, M&R
- Pretreatment and water quality management for Zone A, prior to reverse osmosis treatment.

10. OPERATION, MAINTENANCE AND REPLACEMENT RESPONSIBILITIES

10.1 Zone A Facilities

KUCC would construct, own, operate, maintain and replace the following extraction wells:

- a. Extraction wells 1193 and 109 (the Zone A extraction wells)
- b. Well number ECG1146 (the "acid plume" extraction well)

- c. Well number LTG1147 located near 6200 West 11800 South ("the sulfate extraction well")

KUCC will construct, own, operate, maintain and replace Zone A pretreatment facilities to treat the concentrations of metals and sulfate contributed from the acid plume. This facility might be an enlargement of KUCC's existing nanofiltration demonstration treatment plant. KUCC will operate this facility(ies) to maintain the concentration of sulfate in the feed water at or below 1200 mg/L.

The collection pipelines from the project extraction wells to the Zone A water treatment plant, the water treatment plant and the concentrate discharge pipeline (to KUCC's tailings line) would initially be owned by KUCC, and operated by KUCC. This operation, likely to last five years, would allow for KUCC to gain operating experience, together with its industrial pretreatment process, and reach a point of stabilization in operational mode. The treated water (permeate) discharge pipeline to the JVVCD system would also initially be owned and operated by KUCC. After the five-year initial period, ownership, together with obligations to operate, maintain and replace the permeate discharge pipeline and RO treatment plant (for at least 45 years) would be transferred to JVVCD.

10.2 Zone B Facilities (for Deep Groundwater Extraction)

The facilities for extraction of approximately 4,200 AF to yield 3,500 AF of treated water would include extraction wells, collection pipelines, a reverse osmosis treatment plant at 1000 West 8300 South, a concentrate discharge pipeline to the KUCC tailings pipeline, and a discharge pipeline to the JVVCD system. Following construction and startup testing, ownership of these facilities would lie with JVVCD. JVVCD would commit to operate, maintain and replace these facilities for at least 50 years thereafter.

10.3 Zone B Facilities (for Jordan River/Shallow Groundwater Extraction)

These facilities will include four shallow extraction wells, collection pipelines, reverse osmosis and other membrane treatment facilities located in an enlarged treatment building (together with the Zone B deep groundwater treatment facilities) at 1000 West 8300 South, a concentrate pipeline extending to CVWRF or to SVWRF, and a discharge pipeline to the JVVCD treated water transmission system. Following initial construction and startup testing, ownership of these facilities would remain with JVVCD. JVVCD would then commit to operate, maintain and replace these facilities for at least 50 years.

11. ALLOCATION OF PROJECT BENEFITS

Under this project proposal, JVVCD will use its water rights to receive half of the 7,000 AF of principal aquifer treated groundwater. In addition, it will use its Utah Lake/Jordan River rights for shallow groundwater extraction and treatment. These treated waters will go to the benefit of all of the member agencies and customers of JVVCD (see Section 14 for further description of the rationale for this allocation).

Half of the 7,000 AF of treated, principal aquifer groundwater, or 3,500 AF, will result from KUCC's rights shown in Section 7.3, that will be transferred to JVVCD and converted to municipal rights. The 3,500 AF of treated water that is produced in the Zone A facilities will be allocated by JVVCD to directly benefit the four incorporated communities in the Affected Area. These are: West Jordan City, South Jordan City, Herriman Town and Riverton City. Figure 11.0A shows the Affected Area as it compares with these four communities, as well as unincorporated Salt Lake County lands.

JVVCD has performed an analysis to derive the allocation of Zone A treated water benefits to the four communities. The factors considered in this evaluation were: total population of the affected municipalities, area of each city or town within the overall Affected Area, area of the cities and town within the Zone A Affected Area, and currently approved municipal groundwater rights in the principal aquifer within the overall Affected Area, and within the Zone A Affected Area. Tables 11.0A, 11.0B, 11.0C and 11.0D show methods 1-4 of comparing and evaluating these factors. The allocation percentages for methods 1-4 are summarized in Table 11.0E. A recommended allocation of Zone A treated water benefits is also shown in Table 11.0E. It is summarized in Table 11.0F.

Table 11.0F
Summary of Zone A Treated Water Allocations

City/Town	Allocation	Annual Volume (AF)	Flow Rate (mgd)
West Jordan City	35%	1225	1.2
South Jordan City	30%	1050	1.0
Riverton City	20%	700	0.7
Herriman Town	15%	525	0.5

These four communities have variations in population and area involved in the Affected Area. Other than JVVCD's municipal water rights, only two currently approved municipal water rights, those of West Jordan City and Riverton City, lie within the Affected Area. Both of these lie at the extreme fringe areas, at the

TABLE 11.0A

**SOUTHWEST EXTRACTION AND TREATMENT PROJECT
OPTIONS FOR ALLOCATION OF ZONE A BENEFITS
(METHOD 1)**

Entity	Population Projection (2003 Pop)	(%)	Area in "Affected Area" (Zones A and B) (Mi ²)	(%)	Approved Municipal Water Rights in "Affected Area" (Zones A and B) (cfs)	(%)	Combined Average
West Jordan	79,235 ^(a)	50%	8.7	17%	1.0	9%	25%
South Jordan	37,000 ^(b)	23%	18.8	38%	-	0%	20%
Herriman	5,000 ^(c)	3%	2.8 ^(e)	6%	-	0%	3%
Riverton	37,888 ^(d)	24%	4.7	9%	1.25	12%	15%
SL County/JVWCD	(?)	-	15.1	30%	8.55	79%	37%
	159,123		50.1		10.8		

(a) From West Jordan City planning estimate

(b) From South Jordan City Planning estimate

(c) Herriman estimate

(d) From State Office of Planning and Budget

(e) See Table 11.0E, footnote (a)

TABLE 11.0B

**SOUTHWEST EXTRACTION AND TREATMENT PROJECT
OPTIONS FOR ALLOCATION OF ZONE A BENEFITS
(METHOD 2)**

Entity	Population Projection (2003 Pop)	Area in "Affected Area" (Zones A and B)		Approved Municipal Water Rights in "Affected Area" (Zones A and B)		Combined Average
		(%)	(Mi ²)	(%)	(cfs)	
West Jordan	79,235	50%	8.7	25%	1.0	40%
South Jordan	37,000	23%	18.8	54%	-	25%
Herriman	5,000	3%	2.8	8%	-	4%
Riverton	37,888	24%	4.7	13%	1.25	31%
	159,123		35.0		2.25	

TABLE 11.0C

**SOUTHWEST EXTRACTION AND TREATMENT PROJECT
OPTIONS FOR ALLOCATION OF ZONE A BENEFITS
(METHOD 3)**

Entity	Population Projection		Area in "Affected Area" (Zone A)		Approved Municipal Water Rights in "Affected Area" (Zone A)		Combined Average
	(2003 Pop)	(%)	(Mi ²)	(%)	(cfs)	(%)	
West Jordan	79,235	50%	1.5	9%	-	0%	20%
South Jordan	37,000	23%	4.9	30%	-	0%	18%
Herriman	5,000	3%	2.8	17%	-	0%	7%
Riverton	37,888	24%	0.0	0%	-	0%	8%
SL County/JVWCD	(?)	-	7.3	41%	5.0	100%	47%
	159,123		16.5		5.0		

TABLE 11.0D

**SOUTHWEST EXTRACTION AND TREATMENT PROJECT
OPTIONS FOR ALLOCATION OF ZONE A BENEFITS
(METHOD 4)**

Entity	Population Projection (2003 Pop)	Area in "Affected Area" (Zone A)		Approved Municipal Water Rights in "Affected Area" (Zones A)		Combined Average
		(%)	(Mi ²)	(%)	(cfs)	
West Jordan	79,235	50%	1.5	16%	-	33%
South Jordan	37,000	23%	4.9	53%	-	38%
Herriman	5,000	3%	2.8	31%	-	17%
Riverton	37,888	24%	0.0	0%	-	12%
	<u>159,123</u>		<u>9.2</u>			

TABLE 11.0E

SOUTHWEST EXTRACTION AND TREATMENT PROJECT OPTIONS FOR ALLOCATION OF ZONE A BENEFITS

Allocation by Various Methods						
Entity	Zones A and B		Zone A		Overall Combined Average	Proposed Allocation
	Method 1	Method 2	Method 3	Method 4		
West Jordan	25%	40%	20%	33%	29.5%	35%
South Jordan	20%	25%	18%	38%	24.5%	30%
Herriman ^(a)	3%	4%	7%	17%	8% ^(a)	15%
Riverton	15%	31%	8%	12%	17%	20%
SL County/JVWCD	37%	-	47%	-	21%	

^(a) This assumes current Herriman Town boundaries. However, a substantial westward annexation of Herriman is imminent. After such an annexation, with 5.6 square miles in the Affected Area, the "Overall Combined Averages" would be:

- West Jordan - 29%
- South Jordan - 24%
- Herriman - 10%
- Riverton - 17%
- SL County/JVWCD - 20%

northeast and southern edges. KUCC and JVVCD do not desire to require capital and operating cost contributions from these municipalities.

Therefore, JVVCD proposes to provide benefits from treated water resulting from Zone A facilities to the four affected municipalities by providing guaranteed treated water deliveries with greatly reduced water rates. JVVCD would accomplish this by providing this water to the four communities at less than its base wholesale rate, without surcharges for pumping or peaking. In spite of no pumping charges, this water would be provided at a storage elevation of 5,150 feet above sea level, in the pressure Zone C that normally includes high pumping surcharges.

To give an example, the 1999 wholesale water rates for pressure Zones B and C to West Jordan City, Riverton City and South Jordan City are:

- West Jordan City: \$290.73/AF (pressure Zone C)
- Riverton City: \$307.70/AF (pressure Zone C)
- South Jordan City: \$290.90/AF (pressure Zone B)

In contrast, the 1999 JVVCD rate offered to the four affected municipalities would be as shown in Table 11.0G.

Table 11.0G
JVWCD Water Rate for Zone A Water

<u>Reduced JVWCD Water Rate (1999) for Zone A Water</u>	<u>Unit Cost (\$/AF)</u>
• JVWCD base wholesale rate (without pumping or peaking surcharges)	\$239.22/AF
• Less JVWCD average water source unit cost	(\$142.49/AF)
• Less JVWCD 1999 weighted surface water treatment/wells O&M unit cost	(\$34.62/AF)
• Plus JVWCD "avoided operating cost", as described in section 8.5	\$55.15/AF
• Plus JVWCD additional O, M&R cost to reduce TDS to 250 mg/L (Zones A and B average)	\$25.56/AF
• Plus JVWCD's amortized capital contribution to the NRD project ^(a)	\$59.80/AF
Net 1999 Water Rate:	\$202.62/AF
Actual 1999 Riverton City Pumped Water Rate:	\$307.70/AF
Actual 1999 South Jordan City Pumped Water Rate:	\$290.90/AF
Actual 1999 West Jordan City Pumped Water Rate:	\$290.73/AF

Notes:

^(a) \$4.8 million amortized at 6%, 20 years.

The treated Zone A water would be made available at this reduced rate, as calculated each year under the JVWCD water rate formulas and water rate study, by execution of water purchase agreements with the four communities. This rate would remain in effect for 50 years.

KUCC and JVWCD met with city manager, technical staff and mayors of the four communities during September and October of 1999. Upon invitation by the communities, KUCC, JVWCD and city staff made presentations to the councils of West Jordan City, South Jordan City and Herriman Town during November.

The Herriman town counsel and the South Jordan City counsel voted to endorse the project during those meetings. Enclosed in Appendix E are the letter of endorsement from Herriman and the minutes from the South Jordan City counsel meeting. Riverton City and West Jordan City have also expressed support. Letters of support from these cities will be forwarded as they are received.

12. SCHEDULE; DESIGN AND CONSTRUCTION; FACILITIES OWNERSHIP

12.1 Proposed Project Schedule

Section 10 of the CDM conceptual design report recommends a schedule for pilot testing, design, construction, and startup/testing. The following Table 12.1A summarizes this schedule, together with the proposed schedule for approvals of this project and transfer of Trust Fund balances to JVWCD and/or KUCC, assuming the Proposal is approved by the Trustee.

NOT COMPLETE

TABLE 12.1A
Proposed Project Schedule

Activity	Completed By	Transfer of Trust Funds, Facilities and Water Rights
State Trustee and staff evaluation	March 2000	
EPA Remedial Project Manager evaluation of proposal	March 2000	
State Engineer evaluation of proposal	March 2000	
State and federal public hearings	June 2000	
Land purchases by KUCC and JVWCD	July 2000	Cost of land transferred to reimburse KUCC/JVWCD
Trustee approval of project proposal	September 2000	
EPA Record of Decision	September 2000	
State Engineer change application approvals	September 2000	Transfer remainder of Trust Fund to JVWCD/ KUCC
Pilot testing		
- Zone A	December 1999	
- Zone B	February 2001	
Preliminary design	March 2001	
Final design	December 2001	
Division of Drinking Water approval	January 2002	
Award construction contracts	February 2002	
Complete construction	September 2003	
Startup, testing, begin operation	December 2003	
KUCC completes Zone A treatment plant operation, after process has stabilized	2008-2009	KUCC transfers ownership of plant and water rights, and operation of plant, to JVWCD

12.2 Design

The design work would be performed by, or commissioned and managed by, the parties shown in Table 12.2A, with oversight from UDEQ and USEPA:

TABLE 12.2A

Project Component	Designed By
Zone A Extraction Wells	(existing)
Zone A Water Treatment Plant	KUCC (in collaboration with JVWCD)
Zone A Concentrate Pipeline	KUCC
Zone A Treated Water Discharge Pipeline	JVWCD or KUCC
Zone B Deep Extraction Wells	JVWCD (in collaboration with KUCC)
Zone B Shallow Wells	JVWCD
Zone B Water Treatment Plant	JVWCD (in collaboration with KUCC)
Zone B Concentrate Discharge Pipeline for Deep Groundwater	KUCC/JVWCD
Shallow Groundwater Concentrate Discharge Pipeline	JVWCD
Zone B Treated Water Discharge Pipeline	JVWCD

12.3 Construction

Construction would be performed, by contracting directly with construction contractors, by the same parties that performed the design work shown in Table 12.2A. Startup, testing and beginning operation would be performed by the same parties.

12.4 Facilities Ownership

Ownership of facilities would be as shown in Table 12.4A.

TABLE 12.4A
Ownership of Facilities for Proposed Project

Project Component	Owned By
Zone A Extraction Wells	KUCC
Zone A Water Treatment Plant	KUCC (transferred to JWWCD after approximately 5 years)
Zone A Concentrate Pipeline	KUCC
Zone A Treated Water Discharge Pipeline	JWWCD
Zone B Deep Extraction Wells	JWWCD
Zone B Shallow Wells	JWWCD
Zone B Water Treatment Plant	JWWCD
Zone B Concentrate Discharge Pipeline for Deep Groundwater (to KUCC property line)	JWWCD
Shallow Groundwater Concentrate Discharge Pipeline	JWWCD
Zone B Treated Water Discharge Pipeline	JWWCD

13. LIABILITY AND AGREEMENTS

13.1 Liability

KUCC has certain CERCLA liability in remedial actions for contaminated groundwater. JWWCD has no CERCLA liability. KUCC will not transfer any CERCLA liability to JWWCD. JWWCD desires agreements with USEPA and the State of Utah that hold JWWCD harmless from third party claims and USEPA/UDEQ claims for environmental liabilities. In addition to this agreement, KUCC will hold JWWCD harmless from CERCLA liability or other environmental liabilities resulting from JWWCD's operation of project facilities, except from its own negligent actions.

13.2 Proposed KUCC/JVWCD Agreements With State of Utah and USEPA

KUCC and JVWCD propose to enter into an agreement with the State, by and through the NRD Trustee, to transfer Trust Fund amounts to KUCC and JVWCD in exchange for the KUCC and JVWCD agreement to construct and operate the proposed facilities to provide municipal quality water. KUCC would agree to continue operation of its acid plume well, its sulfate extraction well, extraction wells 1193 and 109, a pretreatment/management process for feedwater to the Zone A treatment plant to maintain the sulfate concentration below 1,200 mg/L, and to operate the Zone A treatment plant for approximately five years to reach a stabilization in treatment process. Subject to the ability to implement an alternative contingency plan, KUCC will make its tailings pipeline available for conveyance of concentrate from the Zones A and B treatment plants.

Under the proposed agreement JVWCD would agree to operate the Zone A treatment plant (after KUCC's five years of initial operation, and subject to the on-going feasibility of the Zone A project), the Zone A pipeline, and the Zone B facilities, for at least 50 years. JVWCD would maintain, repair and replace these facilities for 50 years. JVWCD would agree to make treated water available to the public, as previously described in this proposal.

JVWCD seeks an agreement with USEPA to provide a liability release and third party protection from claims under CERCLA. The State of Utah and KUCC will be approving parties to this agreement. The agreement will describe the proposed project, and endorse its concept. JVWCD will seek a similar agreement with the State for protection from claims under comparable State law.

Because KUCC's life of operations is not currently anticipated to extend beyond 2030, the project proposal contemplates that a new concentrate discharge pipeline may need to be extended to a receiving water body, rather than to KUCC's tailings pond. Given the underlying assumptions in the NRD Consent Decree, it is anticipated that UDEQ will reasonably cooperate in permitting issues to allow for concentrate disposal, whether prior to or after 2030, as necessary.

13.3 Proposed KUCC/JVWCD Agreement

Assuming this Proposal is approved by the NRD Trustee, KUCC and JVWCD proposed to enter into an agreement to govern the relationship between KUCC and JVWCD during the operational period and effectuate the components of the Proposal. A draft of the proposed agreement will be provided to the NRD Trustee in the near future.

14. ZONES A AND B RATIONALE

14.1 Zone A

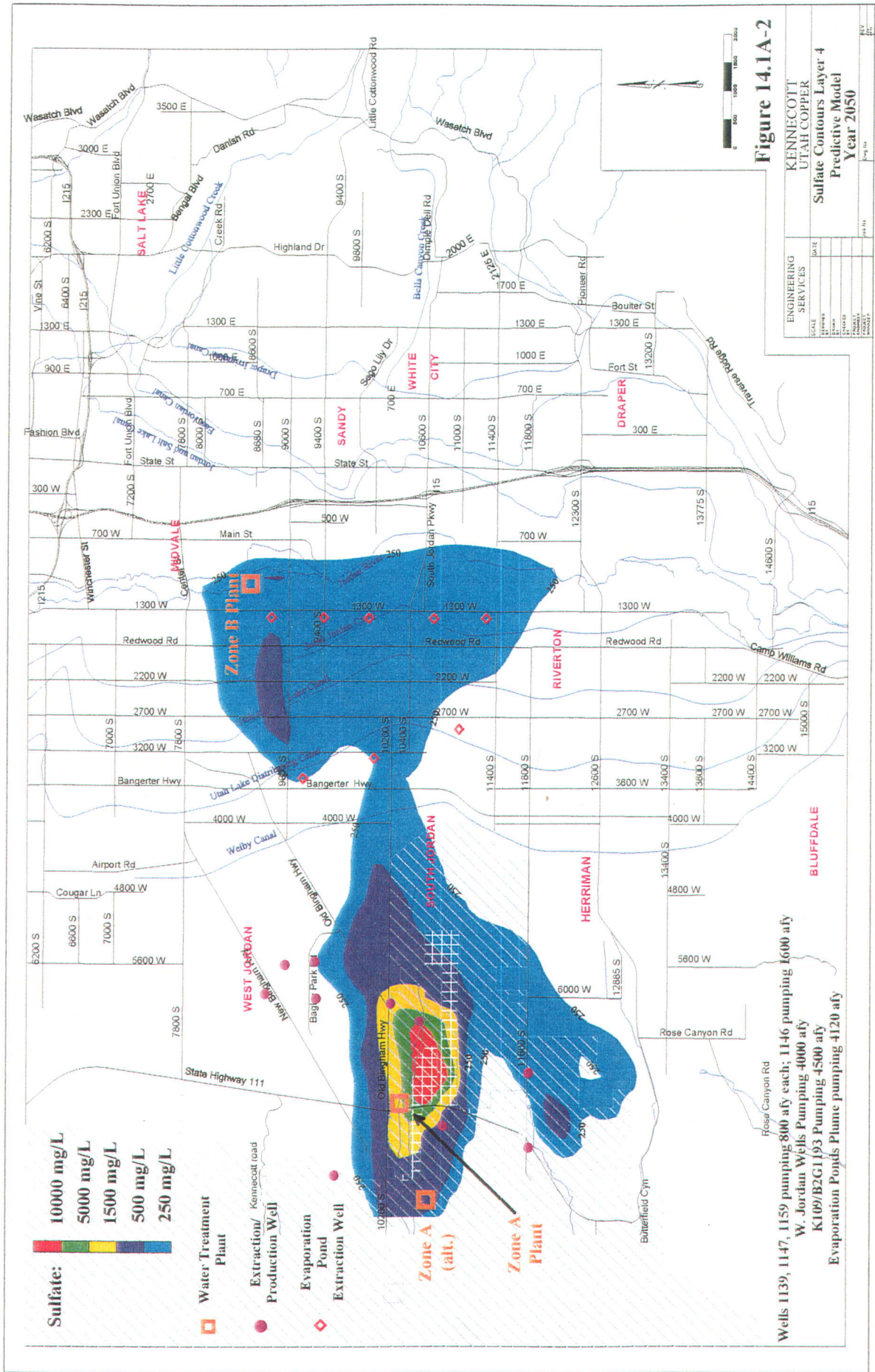
The groundwater in Zone A contains both elevated sulfate (NRD) and acid (CERCLA) contamination, with sulfate concentrations mainly above 1500 mg/L and acidic water containing elevated heavy metal concentrations. KUCC has designed a hydraulic containment system to contain and extract the acid groundwater plume and the elevated sulfate plume as detailed below.

The containment system will consist of acid extraction well(s) in the core of the acidic plume, and sulfate barrier wells constructed in the area near KUCC wells K60 and K109. The extracted water would be treated by two membrane-filtration plants on KUCC property. Concentrate reject from treatment would be placed in the KUCC tailings line or used in the KUCC mineral processing circuit. (An alternative approach will have to be developed if this plan for managing concentrate streams becomes infeasible.) Figure 14.1A shows the potential layout of the extraction wells, the possible location of the treatment plants, and the model-computed distribution of sulfate concentrations in 2025 and 2050 based on this scenario.

The sulfate plume would be pumped at 3000 gpm and the acid plume at 1000 gpm. The total extraction rate of 4000 gpm is approximately the sustained yield of the principal aquifer in the Bingham Creek area. The pumping rate of the acid plume is above the rate required by the NRD Consent Decree (250 gpm or 400 AF/yr average over a five-year period) in order to remove the main mass of the acid plume in 30 years and extend the time in which the sulfate containment system can extract sulfate at levels below 2000 mg/L. The 1000 gpm extracted from the acid plume would be sent to a nanofiltration (NF) plant for pretreatment, and the permeate from the NF plant (about 400 gpm) would be added to the stream of extracted sulfate groundwater and sent to the RO treatment facility.

The total extraction of 3000 gpm from the extraction wells plus the NF permeate has been modeled to yield 3500 AF/year of municipal quality water after RO treatment. The RO/NF concentrate and a small amount of RO lime-treatment sludge would be sent directly to KUCC's tailings line and then to KUCC's tailings impoundment for disposal (Table 5.6A).

KUCC will utilize its existing industrial groundwater rights (which it plans to convert to municipal water rights) to extract groundwater from this zone for treatment and will deliver 3500 AF/year of treated, deep groundwater to the JVWCD, who will make the water available to the cities of Riverton, South



Jordan and West Jordan and the Town of Herriman. If necessary, KUCC also will provide blend water from other operational facilities (mine tunnels and dewatering, clean water wells, and storm water collection systems) to ensure that the Zone A RO plant can produce 3500 AF/year of clean water for at least 50 years and beyond.

The rationale for JWCD receiving and distributing these waters is as follows:

- a. JWCD owns all of the currently approved municipal groundwater rights in Zone A.
- b. The Consent Decree requires that the public in the Affected Area receive benefits from the Trust Fund.
- c. JWCD has existing infrastructure to distribute Zone A water to the four affected communities. This provides an efficiency and economy of scale to the proposed project.
- d. JWCD's existing infrastructure will allow the public in the Affected Area to obtain the benefits of the Trust Fund and the M&I water.
- e. JWCD has current wholesale water delivery contracts and relationships with West Jordan, South Jordan and Riverton Cities (see Table 14.1A). JWCD serves retail connections in Herriman, and has held discussions with Herriman Town regarding near future wholesale water deliveries from the District.
- f. JWCD has the expertise and staff to operate and maintain Zone A facilities in an efficient manner.

Table 14.1A
JWCD Water Purchase Contracts With Affected Communities

Customer	Minimum Annual Water Purchase Contract (AF/year)		
	1999	2000	2001 and thereafter
South Jordan City	7625	8175	8675
West Jordan City	8400	8400	8400
Riverton City	395	395	395

14.2 Zone B

The groundwater in Zone B is the majority of the "sulfate plume," with sulfate concentrations lower than those in Zone A. This is the plume generally dealt with by the NRD Consent Decree. JVVCD will utilize its existing municipal groundwater rights in the Affected Area to extract principal aquifer groundwater for treatment, will receive the 3,500 AF/year of treated, deep groundwater, and will make that water available to all of its member agencies, including the four "affected communities". JVVCD will utilize its own Utah Lake/Jordan River rights for shallow groundwater extraction, and will make that treated water available to its member agencies.

The basis for JVVCD treating and delivering these waters, and making them available to all of its member agencies, includes the following issues:

- a. JVVCD has 79 percent of the currently approved municipal groundwater rights in the Affected Area.
- b. These JVVCD groundwater rights are assets that belong to all of the member agencies of JVVCD throughout Salt Lake County.
- c. JVVCD has the infrastructure existing to convey Zone B treated groundwater throughout Salt Lake County to benefit the member agencies who jointly own the JVVCD municipal groundwater rights. These member agencies have paid for the construction of infrastructure to serve Zones A and B.
- d. JVVCD has contributed valuable information and guidance throughout the period of Consent Decree negotiation and technical review oversight of the RI/FS process.
- e. JVVCD is willing to utilize its Utah Lake/Jordan River rights to accomplish the Trust Fund purpose of "replace, restore or provide the equivalent" of the groundwater from the Affected Area lost as concentrate streams from membrane treatment processes in both Zones A and B.
- f. JVVCD has the expertise and staff to operate and maintain project facilities in an efficient manner.
- g. West Jordan, South Jordan and Riverton Cities are member agencies of JVVCD, and can receive Zone B water. Herriman is served retail water service by JVVCD.

15. MEETING INTENT OF NRD CONSENT DECREE

The following table summarizes the intent of the NRD Consent Decree and delineates the features of this proposal that meet this intent.

TABLE 15.0A

<u>Actions</u>	<u>CD Sect.</u>	<u>Response</u>	<u>Date</u>	<u>Meets Intent</u>	<u>Comments</u>
RI/FS	V.A.	Completed by KUCC	1998	Yes	Reviewed and approved by EPA and TRC; ROD to be issued in 2000.
Acid Well	V.B.	Completed by KUCC	1997	Yes	Currently 1100 AF pumped. Meets pumping criteria.
Source Control	V.C.	Completed by KUCC	1997	Yes	Eastside Collection system permitted under UGWDP.
Trust Fund	V.D.1	Paid by KUCC	1995	Yes	\$9 million cash and Trust Fund established.
Restoration of aquifer, including solid phase contamination	V.D.1	Extraction of sulfate and acid	1997	Yes	Installed sulfate and acid wells have removed 58,000 tons of sulfate since August 1997; this proposal will continue process perpetually.
Replace water	V.D.1	This proposal	2003	Yes	Will produce more than 7000 AF of water annually from Affected Area; and will produce 2300 AF to replace lost concentrate.
Acquire equivalent	V.D.1	N/A	N/A	N/A	Not necessary; restoration and replacement provide sufficient water.
Treatment	V.D.2b	This proposal	2003	Yes	Treatment system described.
Accepted bu M&I Purveyor	V.D.2bi	This proposal	2003	Yes	Water to be accepted by JVVCD, a purveyor of M&I water, with municipal water rights.

TABLE 15.0A

<u>Actions</u>	<u>CD Sect.</u>	<u>Response</u>	<u>Date</u>	<u>Meets Intent</u>	<u>Comments</u>
Prevent and Replace Spread of Contamination	V.D.2bii	This proposal	2003-2053	yes	See section 6.3 of proposal.
Substantially water supply for 40 years	V.D.2biii	This proposal	2003-2043	Yes	See section 6.1 of proposal.
Does not materially increase unit cost to produce remainder of 7000 AF	V.D.2biv	This proposal	2003	Yes	This proposal will produce all of the 7000 AF, within the trust fund amount.
Alternative Sources	V.D.2d	N/A	N/A	N/A	Under this proposal alternative sources are not required to meet the terms of the Consent Decree.
Water quality	V.D.2f	This proposal	2003	Yes	Highest quality (500 TDS) guaranteed.
Water quantity	V.D.2f	This proposal	2003	Yes	More drinking water than required under Consent Decree; more than offsets Lost Use.
Beneficial Use	V.D.5	This proposal	2003	Yes	JVWCD agencies benefit; specifically those in affected area. KUCC water rights converted to municipal use.

Table 15.0B compares Trust Fund with proposed project costs.

16. MEETING EPA/CERCLA REQUIREMENTS

The proposed NRD response combines containment, restoration and beneficial use of the entire Affected Area of the NRD settlement with the response actions proposed as Alternative V under the CERCLA RI/FS for Zone A. Following EPA guidelines, the FS delineates the acceptability of Alternative V as follows (text modified from 1998 FS report).

Table 15.0B
Groundwater Extraction and Treatment System
Comparison of Trust Fund Costs and CDM Estimated Costs

Letter of Credit (7 Percent) Cost of Treatment	TRUST FUND VALUES			10% Contingency CDM Estimate	40% Contingency CDM Estimate	10% Contingency Estimate ^(c)
	1995 Costs	1999 Costs	2000 Costs	1999 Costs	1999 Costs	2000 Costs
Capital Costs						
Treatment Plant (8235 ac-ft/yr inflow)	6,343,000	8,314,400	8,896,690	9,962,593	9,962,593	10,261,470
Treated Water Discharge	42,000	55,050	58,910	403,000	403,000	415,090
Brine Discharge	2,594,000	3,400,220	3,638,340	1,832,000	1,832,000	1,886,960
Engineering Costs	898,000	1,177,100	1,259,530	4,832,176	5,929,960	4,977,140
Pipeline Easements	218,000	285,750	305,770	0	0	0
Contingency Costs	1,009,000	1,322,600	1,415,220	3,909,659	7,568,937	4,026,950
Subtotal Capital Costs	11,121,782	14,578,430	15,599,410	20,939,428	25,696,490	21,567,610
Operations & Maintenance Present Value	\$ 15,336,079	20,102,530	21,510,380	19,852,772	19,852,772	20,448,360
Cost of Operations without Contamination	\$ 0	0	0	(4,734,000) ^(b)	(4,734,000) ^(b)	(4,876,020)
Replacement Costs Present Value	\$ 1,547,632	2,028,640	2,170,710	1,903,233	2,313,212	1,960,330
Total of original \$28 million letter of credit	\$ 28,000,000	\$ 36,709,600	\$ 39,280,500	\$ 37,961,433	\$ 43,128,474	\$ 39,100,280
Cash Value Payment (5 Percent)						
Cost of Extraction						
Extraction Wells	\$ 2,665,000	\$ 3,239,310	\$ 3,401,340	2,160,000	2,160,000	2,224,800
Engineering Costs	\$ 469,000	\$ 570,070	\$ 598,580	712,800	907,200	734,180
Contingency Costs	\$ 266,000	\$ 323,320	\$ 339,500	216,000	864,000	222,480
Total	\$ 3,400,000	\$ 4,132,700	\$ 4,339,420	3,088,800	3,931,200	3,181,460
Collection Pipelines	\$ 2,296,020	\$ 2,790,810	\$ 2,930,410	2,644,000	2,644,000	2,723,320
Engineering Costs	\$ 459,204	\$ 558,160	\$ 586,080	872,520	1,110,480	898,700
Contingency Costs	\$ 344,776	\$ 419,080	\$ 440,040	264,400	1,057,600	272,330
Total	\$ 3,100,000	\$ 3,768,050	\$ 3,956,530	3,780,920	4,812,080	3,894,350
Cost of Development without Contamination	(\$3,500,000)	\$ (4,254,250)	\$ (4,467,050)	(2,801,000) ^{(a) (b)}	(2,801,000) ^{(a) (b)}	(2,885,030)
Total	\$ 3,000,000	\$ 3,646,500	\$ 3,828,900	\$ 4,068,720	\$ 5,942,280	\$ 4,190,780
Lost Use						
Cost of lost use	\$ 5,500,000	\$ 6,685,250	\$ 7,019,650			
Shallow Well Contingency, Engineering, Constr.	\$ 0	\$ 0	\$ 0	7,323,598	9,041,368	7,543,310
Total	\$ 5,500,000	\$ 6,685,250	\$ 7,019,650	\$ 7,323,598	\$ 9,041,368	\$ 7,543,310
Management of Assets	\$ 500,000	\$ 607,750	\$ 638,150	\$ 638,000 ^{(a) (c)}	\$ 638,000 ^{(a) (c)}	657,140
Total of original \$9 million cash value payment	\$ 9,000,000	\$ 10,939,500	\$ 11,486,700	\$ 12,030,318	\$ 15,621,648	\$ 12,391,230
Total Consent Decree Amounts	\$ 37,000,000	\$ 47,649,100	\$ 50,767,200	\$ 49,991,751	\$ 58,750,122	\$ 51,491,510
Plus JWCD Process Enhancements Total				\$ 8,253,942	\$ 8,888,211	
Grand Total				\$ 58,245,693	\$ 67,638,333	

Notes:

(a) JWCD estimates (1999)

(b) Avoided cost contribution by JWCD

(c) JWCD/KUCC estimates by increasing 1999 CDM estimates by 3%

(d) Funds to be used by Trustee

Description. Alternative V includes hydraulic containment of sulfate and acid, active restoration of the acid portion of the plume, extraction and restoration of the elevated sulfate plume in Zone A, membrane treatment of extracted groundwater, and delivery of concentrate to the KUCC tailings impoundment. Active pumping of the acid plume also would protect the sulfate barrier well system and RO treatment plant from being compromised by acid water.

Overall Protection of Human Health and the Environment. Alternative V provides overall protectiveness of human health and the environment by eliminating human or ecological exposure pathways to contaminants through institutional controls, point-of-use management, and containment of groundwater having contaminant concentrations above levels of concern, and by actively attempting to restore groundwater in the plume. Delivery of the acid groundwater directly to the tailings line would result in neutralization of acidic groundwater and precipitation of associated contaminants in a contained impoundment and should not represent a human or environmental hazard.

Compliance with Potential ARARs¹. Alternative V would comply with ARARs. A key component of Alternative V is hydraulic containment of the acid plume, which will prevent this contaminated groundwater from affecting down gradient drinking water wells. Under this alternative, the acid plume effectively becomes a waste management unit such that the appropriate "point of compliance" for measuring compliance with ARARs is at and beyond the edge of the containment area. At the point of compliance, all levels of concern for pH and metals would be met immediately. Modeling indicates that, for sulfate, natural attenuation would achieve the PRG of 1,500 mg/L² outside the containment area within approximately 5 to 10 years and the Utah drinking water standard (500 mg/L) in approximately 20 to 40 years. Institutional controls using the point-of-use level of 500 mg/L will be applied to prevent the ingestion of groundwater exceeding this concentration down gradient of the 1,500 mg/L sulfate barrier well system.

RO/NF concentrate will be delivered to the KUCC tailings impoundment. The concentrate would consist of the byproduct of treated groundwater contaminated by former mining practices and should not be subject to the zero discharge

¹ Applicable or relevant and appropriate requirements.

² There are no clear cleanup standard ARARs for sulfate or TDS under the Utah groundwater corrective action regulations. The presumptive standards for groundwater Corrective Action Concentration Limits (CACs) are the Utah groundwater quality standards (UAC R317-6-6.15.F); however, there is no such groundwater quality standard for sulfate or TDS (UAC R317-6-2). Where there is no groundwater quality standard for a particular contaminant, CACL is proposed taking into consideration federal MCLGs, health advisories, risk-based contaminant levels or standards established by other regulatory agencies and other relevant information. An Alternate Corrective Action Concentration Limit (ACACL) can be established in place of a CACL if it is protective of human health and the environment and utilizes best available technology. In this case, the health based Preliminary Remediation Goal ("PRG") for sulfate is 1,500 mg/L.

limitations for process wastewater applicable to active mining operations. See 48 Fed. Reg. 7953 (Feb. 8, 1979). Discharges from the tailings impoundment would, however, need to comply with established UPDES permit limits. Alternatively, if the zero discharge limitations were deemed applicable to the delivery option, the associated discharge would qualify for the "equivalent standard of performance" ARARs waiver. Specifically, in accordance with the combined waste stream rule, the volume of effluent recycled from the tailings impoundment would establish compliance with the zero discharge limitations. See 40 C.F.R. § 440.131(a) (1996). In addition, delivery of RO/NF concentrate to the tailings impoundment would require compliance with groundwater protection requirements.

Long-Term Effectiveness and Permanence. Alternative V provides long-term effectiveness and permanence by eliminating exposure to contaminated groundwater, by controlling the migration of the acid portion of the plume, and by actively extracting acidic groundwater from the principal aquifer. For some proposed PRGs, the remediation time frame may still be longer than the 30 years. For these reasons, long-term management of the site will be required, and would consist of periodic maintenance of the groundwater extraction wells, groundwater compliance monitoring (for all repositories and the hydraulic containment systems), and operation and maintenance of the water treatment system, all of which will be implemented under this proposal.

Discharge of the NF concentrate or acidic groundwater to the KUCC tailings line may result in increased total dissolved solids in the process system, and will need to be considered in view of operational or permit requirements. Recent studies by KUCC suggest that the level of discharge proposed in this response will not adversely affect KUCC operations and will meet UPDES discharge requirements.

Reduction of Toxicity, Mobility and Volume Through Treatment. Alternative V reduces TMV by extracting and treating and (or) discharging contaminated groundwater. Hydraulic containment, although not designed to actively remediate the plume, will permanently reduce the toxicity and volume of the plume and will prevent the portion of the plume currently above PRGs from migrating farther down gradient.

Extraction of acid groundwater followed by delivery to the tailings line would permanently and significantly reduce the volume (and mass) of contaminants in the groundwater through neutralization reactions.

Short-Term Effectiveness. Implementation of Alternative V is not expected to result in any serious potential risks for remedial action workers or the community during construction. All construction work (drilling and well installation, pipeline construction, water treatment plant construction) would be conducted following standard health and safety practices associated with each of these activities. If necessary, dust suppression may be employed during construction of the water

treatment plant. The Remediation Action Objectives of preventing human and ecological exposure to contaminated groundwater above PRGs would be achieved by institutional controls, point-of-use management of groundwater above these levels, and hydraulic containment, that prevents the migration of the acid plume beyond the containment boundary.

Implementability. Alternative V can be implemented technically, but the disposal option will require meeting substantive requirements of permits. Obtaining approval for these new facilities should be possible but may be untimely in relation to construction of the groundwater extraction and water treatment plant. Approval of new facilities under the NRD settlement will require coordination between the State, KUCC and non-KUCC parties.

APPENDIX A

Groundwater Modeling

Flow Model. KUCC developed a groundwater model of the southwestern Jordan Valley (SWJV) as part of the RI/FS to analyze flow paths and groundwater velocities in the principal aquifer and to evaluate remedial options. The model area extends from the bedrock/alluvial interface at the base of the Oquirrh Mountains on the west, to the bedrock/alluvial interface at the base of the Wasatch Mountains on the east, and from approximately 6000 South on the north to the base of the Traverse Mountains on the south. The model has eight sloping layers ranging in thickness from 100 to 400 feet. The model uses a three-dimensional, finite difference, numerical code called MODFLOW (McDonald and Harbaugh 1988) with a typical elemental size of 500 by 500 feet. This code is internationally accepted and was used for the Salt Lake Valley Regional Groundwater Flow Model developed by the United States Geological Survey (Lambert 1995).

Recharge to the principal and shallow unconfined aquifers comes from precipitation, bedrock aquifer, irrigation canals, irrigated fields, lawns and gardens, stream and channel fill, and reservoirs and evaporation ponds.

Water loss comes from well extraction, evapotranspiration and removal at head-dependent boundaries.

The model was calibrated for both steady and transient states. The steady state simulated hydrologic conditions in 1965. The transient state simulated the period between 1966 and 1998 and included annual stress periods. Calibration variables were adjusted within reasonable ranges, as determined from data collected by the RI and other work. KUCC considered the calibration process to be successful when a reasonable match was made between observed and modeled conditions for the years being simulated.

The calibrated transient model closely simulated observed water level declines and vertical hydraulic gradients throughout the SWJV, yielded reasonable groundwater flow to the Jordan River, and accurately computed flows through the northern boundary.

Transport Model. KUCC's calibrated groundwater flow model was then coupled with a contaminant transport code, MT3D, to model historical and future migration of storm and mine waste water that leaked from the former Bingham Creek reservoir. Transport models attempt to combine groundwater flow with the physical aspects of contaminant transport, including advection, dispersion and chemical reactions. Although a flow model can provide information about contaminant migration through the use of particle tracking techniques, these techniques do not provide information about the concentration of a contaminant at a given point in time and space. Transport modeling is different from particle tracking because it considers dispersion and the effects of chemical reactions and produces a three-dimensional distribution of concentrations with time. The KUCC transport model report is presented in the 1998 South End Groundwater RI, Appendix G.

The transport model was calibrated to observed 1996-1997 sulfate concentrations down gradient of the former Bingham Creek reservoirs. Calibration was achieved by finding a set of transport parameters (i.e., retardation, dispersivity and porosity) within an accepted range that reasonably reproduced field-measured concentrations. The large amount of data available for calibration provided good control for the rate and direction of plume movement. For example, the transport model was able to reproduce the southeast component of the sulfate plume geometry. The model was then expanded to include the sulfate contamination near the former KUCC evaporation ponds.

The transport model uses the following parameters for simulation and calibration:

- Specified concentration cells on the western and southern boundaries to simulate alluvial underflow and flow from the bedrock aquifer to the principal aquifer.
- Specified concentrations for the Large Bingham Creek Reservoir from 1965 to 1991, and for infiltration from precipitation.
- Retardation of sulfate, that was varied as a function of sulfate concentration, and constant porosity, were used for all layers.

The transport model is an approximation of the field environment. Many of the transport parameters are not known absolutely, and change in any of them can affect the results. Other limitations almost certainly include local, but significant variations in the hydrogeology of the principal aquifer, uncertainties in the flow model and boundary conditions, density dependent flow, and the lack of modeling of geochemical reactions, particularly neutralization. However, geochemical reactions are partially mimicked in the transport model through the use of the retardation factor. Nevertheless, the model is probably a reasonable first approximation of the kinematics of the Bingham Creek and former evaporation ponds plumes and allows the feasibility of various remedial strategies to be tested.

APPENDIX B

Hydrogeology

Groundwater Recharge. The principal aquifer is recharged from surface infiltration of precipitation, irrigation water and canal water, bedrock inflow, and to a limited extent from surface infiltration of waters emanating from Butterfield Creek. The bedrock of the Oquirrh Mountains provides recharge to the groundwater in the western part of the SWJV, and this groundwater then travels eastward into the basin. Aquifer recharge is greater in the eastern part of the SWJV and in the Herriman area due to recharge from surface water.

Groundwater Extraction. Most of the water extracted from the principal aquifer is used for municipal or industrial purposes. The largest extractions in the study area, in or near the Affected Area, are from the West Jordan and Riverton city well fields and KUCC process water wells. West Jordan City extracted an average of 6,012 acre-feet per year (afy) from 1990-1996 (West Jordan City 1996); Riverton City extracted about 3,300 afy (Lambert 1995). Kennecott production wells (1193 and 109) extract about 5,000 to 5,400 afy.

Groundwater Potentiometric Surface. The average depth below ground surface to the potentiometric surface in the principal aquifer of the SWJV is about 235 ft. Groundwater flow is predominantly west to east from the base of the Oquirrh Mountains to the Jordan River. Groundwater in the principal aquifer near the Traverse Mountains generally flows to the northeast, changing to an easterly flow near the center of the basin.

Groundwater Elevation Changes. Groundwater elevations declined substantially throughout the SWJV from 1986 to 1996. Water-level declines observed during this period are as much as 81 feet, depending on location in the aquifer. The largest declines have occurred in the West Jordan City well field area (81 feet) and near KUCC process water wells (72 feet). The rate of decline in this area has averaged 4-8 ft/yr. The rate of decline increased substantially during 1991-1996 due to increased pumping by West Jordan City.

Water-level declines along the eastern boundary of the KUCC waste rock piles have averaged 0.7 ft/yr since 1986. Some of this decline may be associated with the upgraded Eastside collection system, but is more likely due to several years of below-average precipitation during the late 1980s and early 1990s.

The overall average rate of water-level decline for the SWJV was approximately 2.4 ft/yr from 1986 to 1996. The continued decline of groundwater elevations, and the relatively rapid increase in decline in recent years, indicates that more groundwater is being removed from the principal aquifer than is currently supplied by natural recharge.

Hydraulic Gradients. Horizontal hydraulic gradients in the SWJV vary considerably depending on the region. They are generally steeper near the mountains and shallower in

the valley. Along a flow line from the Oquirrh Mountains to the Jordan River, the average composite horizontal hydraulic gradient is approximately 0.025.

Upward vertical hydraulic gradients are greatest near the base of the Oquirrh Mountains. Downward vertical gradients are present east of the Bingham Creek reservoir system and near the KUCC production wells. In the center of the western side of the basin (east of 1193 and 109 to the former KUCC evaporation ponds), vertical hydraulic gradients are nearly non-existent. Both upward and downward gradients are found east of the former KUCC evaporation ponds, that reflects infiltration from canals and regional flow of groundwater to the Jordan River, respectively. Near the Jordan River, the vertical gradients are upward. Location variations in vertical gradients are also observed around municipal and KUCC well fields.

Groundwater Velocity. Average horizontal groundwater velocities are based on Darcy's Law, using average gradients and hydraulic conductivity, and an effective porosity of 0.225, which is typical for gravel (Freeze and Cherry 1979). The overall linear groundwater velocity, based on a groundwater flow path from the Oquirrh Mountains to the Jordan River, is about 550 ft/yr (standard deviation of ± 525 ft/yr). This velocity is based on an average gradient of 0.025. In general, the average linear velocity of groundwater between the Oquirrh Mountains and Highway 111 is lower than farther east in the KUCC production well area. The lower velocity near the mountain front is due to lower hydraulic conductivity material (volcanic gravel) than in the production well area, which consists of quartzitic gravel.

Isotopic data, specifically tritium and CFCs (chlorofluorocarbons), also allow an estimate of average linear groundwater velocity. In 1997, six CFC samples were collected along a flow line of the plume extending from the former Bingham Creek reservoir to the eastern edge of the plume (Solomon and Bowman 1997). Monitoring well P190A, located southeast of K60 just down gradient of the former Bingham Creek reservoir sulfate plume, yields a CFC-12 recharge age of 1961, which is consistent with the observed tritium activity in this well. The computed travel time from the Bingham Creek reservoir to P190A is 36 years, which yields an average linear groundwater velocity of about 500 ft/yr. Because dispersion (i.e., mechanical mixing of two fluids in the aquifer) could increase flow rates, this velocity may be in error by about 30 percent, suggesting a range in average groundwater velocity from 500 to 650 ft/yr.

APPENDIX C

Plume Contraction and Containment

**GROUNDWATER MODELING REPORT FOR KENNECOTT
UTAH COPPER CORPORATION
SOUTH FACILITIES
GROUNDWATER PLUME
SOUTH JORDAN VALLEY, UTAH**

**ADDITIONAL MODELING STUDIES FOR PLUME
CONTAINMENT IN SOUTHWESTERN JORDAN
VALLEY, UTAH**

**OCTOBER 1999
KENNECOTT UTAH COPPER CORPORATION
ENVIRONMENTAL ENGINEERING PROJECTS GROUP**

**Additonal Modeling Studies for
Plume Containment in
Southwestern Jordan Valley, Utah**

**Kennecott Utah Copper Corporation
Environmental Engineering Projects Group**

October 1999

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EXECUTIVE SUMMARY

As part of additional studies related to the Kennecott Utah Copper Corporation (KUCC) Remedial Investigation and Feasibility Study (RI/FS) of groundwater in the southwestern Jordan Valley (KUCC 1998), KUCC has continued optimization of its groundwater model and also investigated the feasibility of using groundwater injection wells to contain the Bingham Creek groundwater plume. The new modeling allowed KUCC to analyze groundwater flow and contaminant migration and evaluate containment options for various groundwater response actions.

KUCC has made improvements to the original flow and transport model used in the RI/FS investigations, including incorporation of a head-dependant (general head) boundary along the western edge of the model instead of the constant flux boundary used in the original modeling. Also, the eastern model boundary was expanded from the Jordan River east to the base of the Wasatch Mountains. Updated field data are also incorporated into the current flow and transport model.

KUCC's current expanded sub-regional model of the southwestern Jordan covers 167 square miles and is bounded by the Oquirrh and Traverse mountains (on the west and south) and by the Wasatch mountains and approximately 6000 South street (on the east and north). The model contains a grid of 94 rows and 136 columns, with variably sized cells and eight vertical layers.

The model incorporates recharge to the principal and shallow unconfined aquifers from the following sources:

- Precipitation
- Bedrock aquifer
- Irrigation canals
- Irrigated fields, lawns and gardens
- Stream and channel fill
- Reservoirs and evaporation ponds
- Groundwater injection wells (during modeling of future remediation scenarios).

Discharge sources include extraction from wells, evapotranspiration and head-dependent boundaries (KUCC 1998).

KUCC recalibrated the expanded model for steady and transient states in the same manner as in the RI/FS study. The steady state simulated hydrologic conditions in 1965. The transient state simulated the period 1966-1998, and included annual stress periods. Calibration variables were adjusted within reasonable ranges, as determined from data collected from the RI/FS and other work. The calibration process is considered successful when a reasonable match is made between observed and modeled conditions for the years being simulated.

The calibrated model closely matched observed water-level declines, estimated flow exchange to the Jordan River, computed flows through the northern and eastern boundary, and vertical hydraulic gradients throughout the modeled area. It is therefore considered to be a useful tool for predicting flow and contaminant transport for the SWJV.

Two cases were investigated in the region between KUCC production wells K109/B2G1193 and the West Jordan municipal well field: one with groundwater injection and one without injection.

Both scenarios used identical KUCC pumping rates of 3000 gallons per minute (gpm) combined for wells K109 and B2G1193, 1000 gpm for the acid well, and 500 gpm each for the Lark production well, North Shoulder well and Sulfate Extraction well. Two scenarios were used for the West Jordan municipal wells: pumping rates of 3750 gpm (3000 acre-feet per year) and 5000 gpm (4000 afy) extracted during a six-month period each year. Extraction of 2575 gpm east of the former KUCC evaporation wells was used for all cases. The only variance to the modeling well package was the inclusion or exclusion of the three injection wells, adding 500, 125 and 500 gpm.

The use of the three injection wells in the predictive model simulations appeared to have a noticeable effect on sulfate concentrations at the five locations down gradient of the injection points included in this report. This was due mostly to the dilution of higher sulfate groundwater by lower sulfate injected water (averaged 50 mg/L), but there were some signs of improvements due to some "mounding" effects in the uppermost modeled aquifer layer 3 which seemed to affect localized flow direction.

West Jordan municipal well extraction rates of 3000 and 4000 afy (3750 and 5000 gpm for six months respectively) were modeled for injection and non-injection comparisons. The higher rate showed a trend of increased sulfate drawn toward the West Jordan well field versus the lesser West Jordan pumping for both injection and non-injection modeling. Groundwater injection did provide improvements in sulfate and drawdown for both West Jordan pumping cases.

1.0 INTRODUCTION

1.1 Background

The expanded predictive model was developed to provide a tool for better estimation of the regional groundwater flow and contaminant transport as part of the continuing studies for the Kennecott Utah Copper Corporation (KUCC) Remedial Investigation and Feasibility Study of Groundwater in the southwestern Jordan Valley, Utah (RI/FS). The study area boundaries of the model are shown in Figure 1.

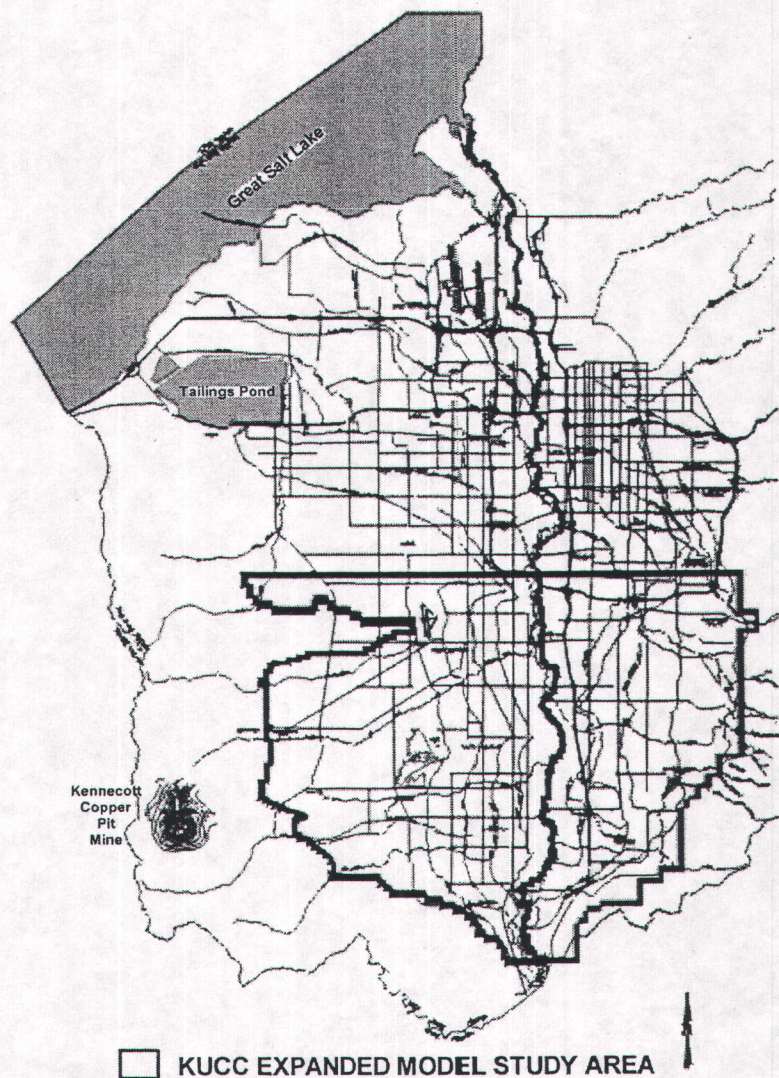


Figure 1: Predictive Flow Model Study Area Location Map.

1.2 Modeling Codes

The groundwater flow model constructed as part of the RI/FS was developed using the finite difference, modular, three-dimensional groundwater flow model MODFLOW (McDonald and Harbaugh 1988) coupled with MT3D (Zheng 1996) which is a three-dimensional method of

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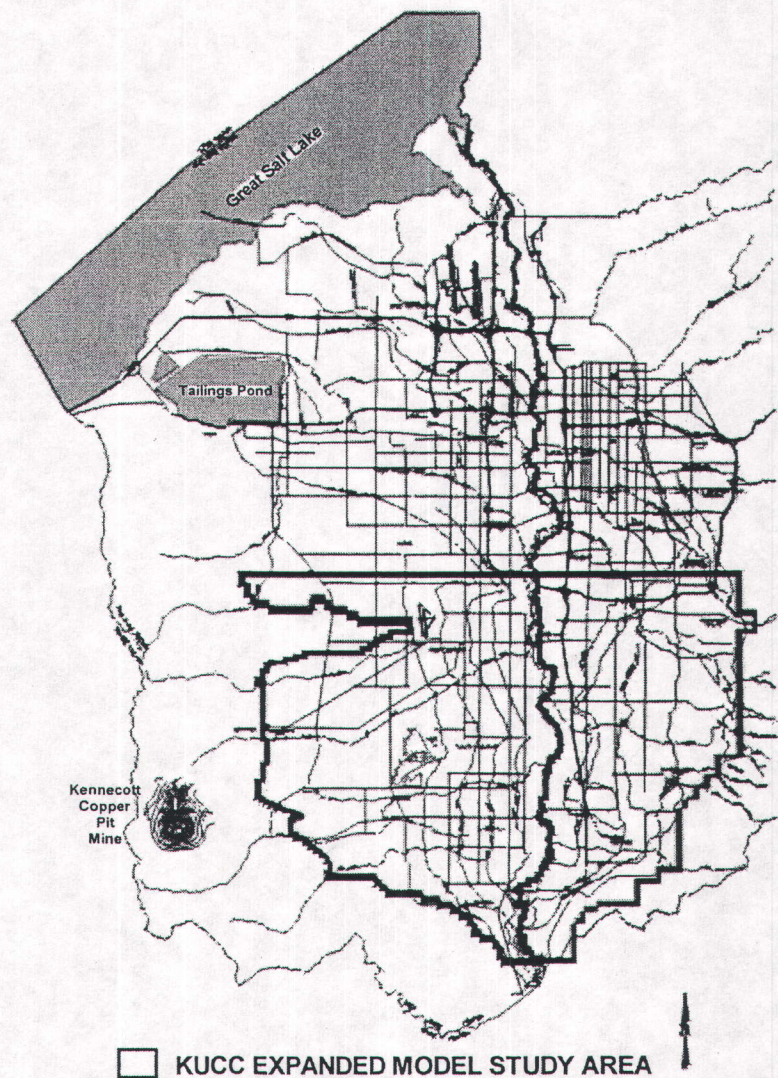


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characteristics transport code. MODFLOW was developed by the U.S. Geological Survey to approximate flow within a groundwater flow system. MT3D is a transport model that uses the principles of combining groundwater flow with the physical aspects of contaminant transport, including advection, dispersion and chemical reactions.

2.0 MODELING APPROACH

2.1 Purpose and Scope

The purpose of this report is to provide a summary of the observed effects due to the placement of groundwater injection wells, in conjunction with extraction wells, as a proposed remediation strategy using the KUCC expanded flow and transport predictive model.

One of the main reasons for considering groundwater injection in this region is that comparison of 1999 with 1996 data shows that the sulfate and pH plumes nearest the West Jordan municipal well field have expanded toward the West Jordan well field. Groundwater injection into the upper part of the aquifer of this region could provide protection in two ways: groundwater mounding and sulfate dilution.

This report is focused on comparisons of two separate modeling scenarios:

- 1) Runs without injection wells ("base case" scenario)
- 2) Runs with groundwater injection at three locations

Numerous investigative scenarios with a variety of combinations of injection well locations and rates were done in the initial stages of modeling. The preferred scenario was three separate injection points between the areas of K109/B2G1193 extraction wells and the West Jordan municipal wells. Initial modeling used rates of injection that ranged between 500 gallons per minute (gpm) and 2000 gpm; a cumulative rate of approximately 1125 gpm provided the best match with available water and infrastructure. Injection was modeled in the upper 300 feet of the principal aquifer (model layers 3 and 4). Well locations with their respective rates are shown in Figure 2.

2.2 Simulation Time Periods

KUCC used modeling stress periods of six months for these modeling runs. This allowed the model to more closely simulate seasonal pumping and/or injection.

Injection and non-injection modeling scenarios were conducted for two West Jordan municipal pumping rates: 3000 and 4000 acre-feet per year (afy). An average withdrawal of 3000 afy was investigated in order to be comparable to modeling for the RI/FS. For that scenario, it was assumed that West Jordan pumping in production well W363 was halted and redistributed among the other West Jordan wells. A West Jordan pumping rate of 4000 afy was also investigated, as this rate is more representative of the rate West Jordan is expected to extract into the future. For this case, West Jordan well W363 was actively pumping instead of redistributed among the other wells. Both West Jordan pumping scenarios were carried out via extraction during a six-month period, while during the other six months the wells were switched off.

KUCC extraction at wells K109, B2G1193 (K60 replacement well), ECG1146 (Acid Well), BCG1159 (North Shoulder Well), LTG1139 (Lark Production Well) and LTG1147 (Sulfate Extraction Well) are listed in Table 1. Extraction rates at the KUCC wells were assumed to remain operative year-round for predictive model simulations.

Table 1. Modeling Extraction Rates for KUCC Wells.

<u>KUCC Extraction Well</u>	<u>Average Extraction Rate (gpm)</u>
K109	1800
B2G1193	1200
ECG1146	1000
BCG1159	500
LTG1139	500
LTG1147	500

Groundwater extraction in the former Evaporation pond area was included in both the injection and non-injection scenarios. Extraction was set at cumulative rate of 4120 afy for eight wells; their locations are shown in Figure 2.

3.0 MODELING RESULTS

The main criteria for analysis included effects on flow lines, groundwater elevations and sulfate concentrations in the region of groundwater injection. Differences between no injection and injection scenarios were best compared by the use of time-series plots and contour maps of sulfate concentrations in groundwater. Figure 3 shows time-series sulfate graphs for injection vs. non-injection at KUCC observation wells WJG1154, WJG1171, P191 and P193, as well as at West Jordan production well W363, assuming West Jordan municipal well pumping of 3000 afy. The same time-series graphs for West Jordan pumping rate at 4000 afy are shown in Figure 9. Figure 4 shows initial sulfate modeling concentrations whereas Figures 5 through 8 are sulfate contour maps comparing the two predictive scenarios at 25 and 50 years into the future for West Jordan pumping of 3000 afy. Equivalent plots for West Jordan pumping of 4000 afy are shown in Figures 10 through 13.

With injection, the overall trend at these five observation wells shows inhibition of increasing sulfate concentrations, most notably in the area of the West Jordan municipal well field (wells W363, WJG1154 and WJG1171). KUCC observation wells P191 and P193 located down gradient of the injection well region in Bingham Creek channel (Figure 2) also show reductions in sulfate concentration. Injection reduced drawdown due to West Jordan and KUCC pumping. Both groundwater mounding and down gradient dilution were also observed.

Comparison of the effects of extraction and injection for the two West Jordan extraction rates of 3000 and 4000 afy showed some notable differences. The time-series plots for these scenarios (Figures 3 and 9) show that sulfate concentrations for modeling observation points at W363,

WJG1154 and WJG1171 increase with the increasing pumping in the West Jordan municipal wells. Figure 9 also shows that for the increased West Jordan pumping (non-injection) scenario, drawdown is such that layer 3 dries up in the region. For the injection scenario however, layer 3 does not go dry at any of the shown observation points.

4.0 LIMITATIONS OF THE MODELING

The hydrogeologic system in this area is complex and can only be approximated in the modeling. As a result, techniques directed toward smoothing and weighting collected data were required to incorporate the actual properties found within the groundwater system as described in the RI report (KUCC 1998).

The KUCC model is currently being updated to model variable density groundwater flow. Changes in plume movement due to density-driven flow could have a notable effect on any numerically modeled remediation system. Potential efficiency issues related to injection will need to be investigated with field studies.

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Figures

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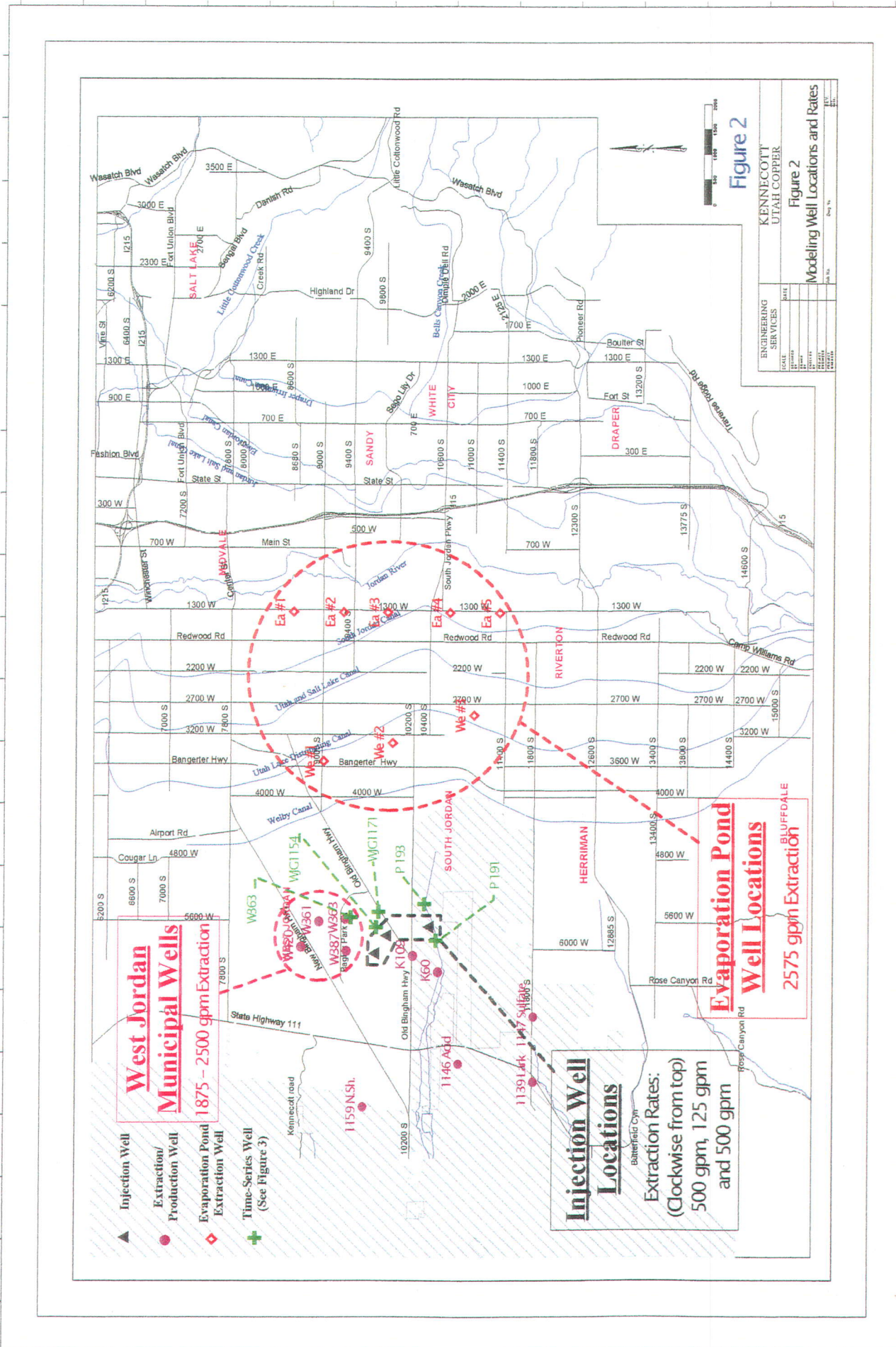


Figure 2

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Modeling Well Locations and Rates	

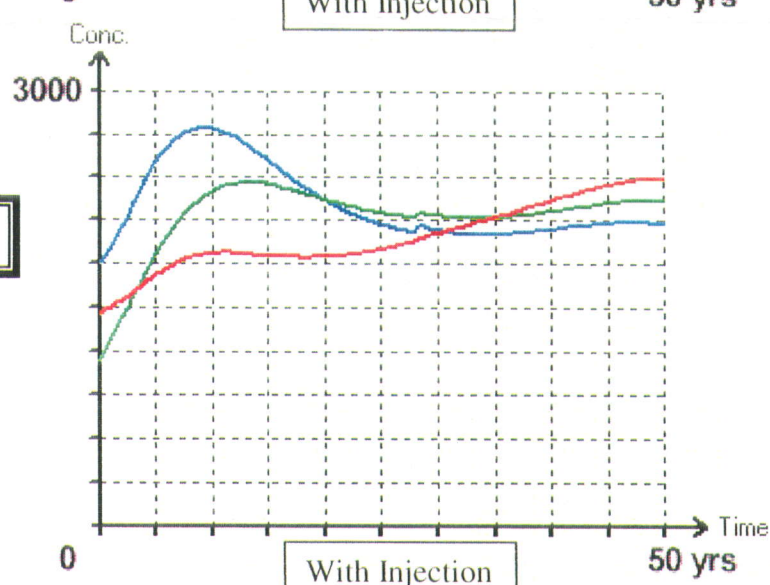
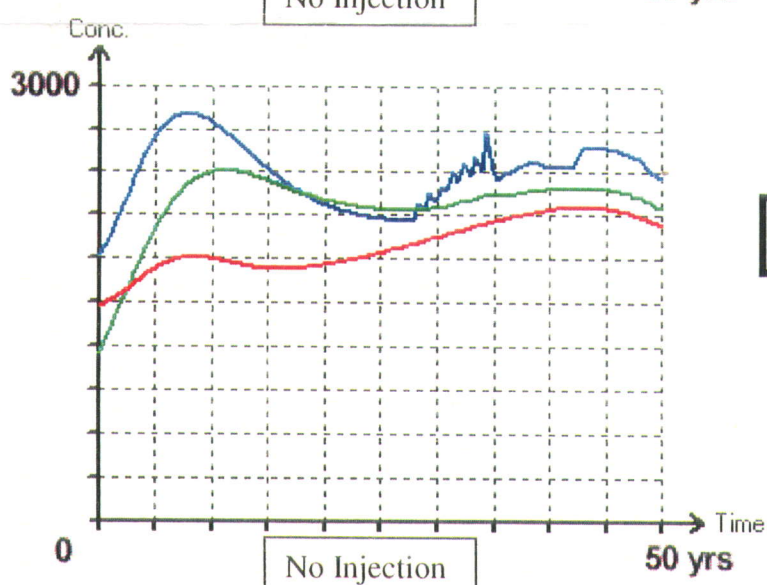
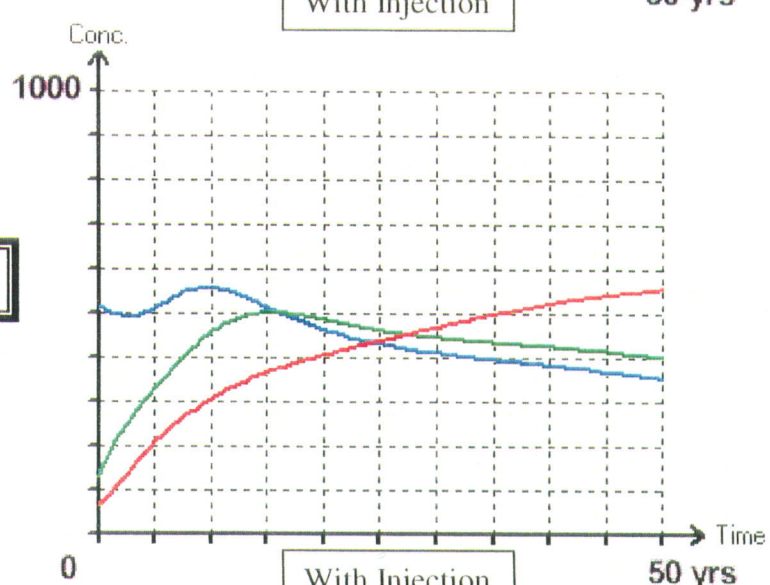
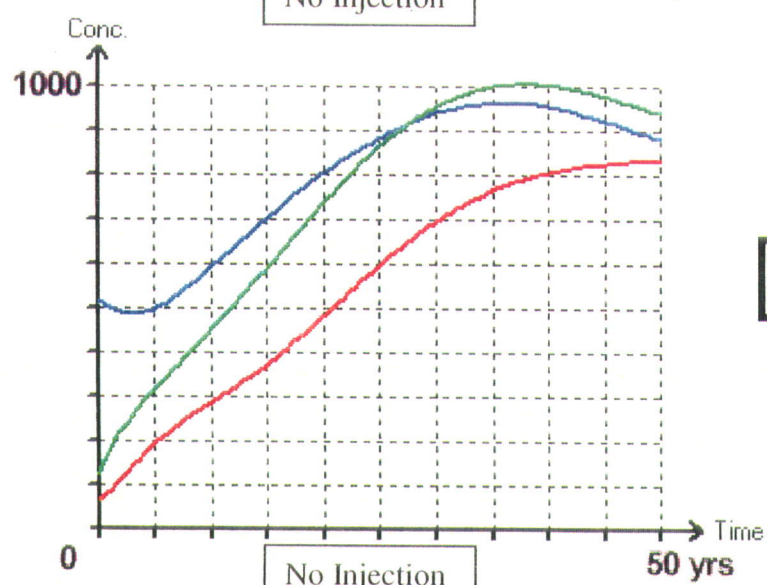
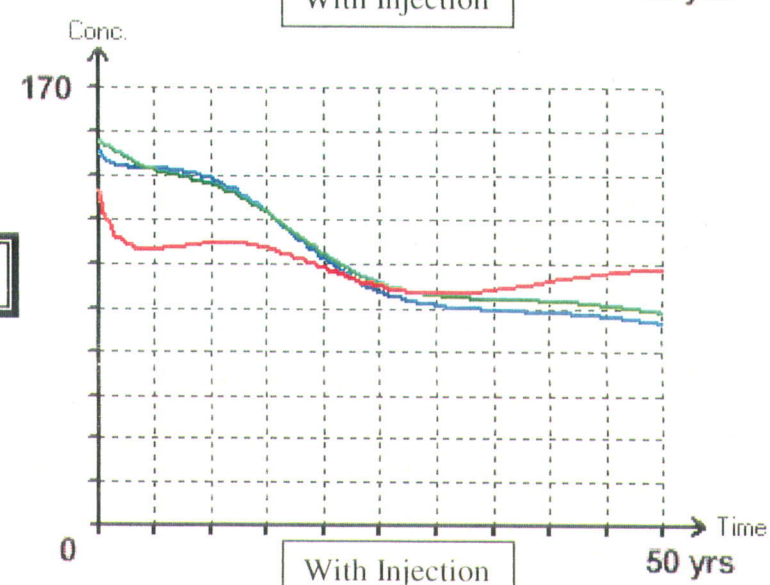
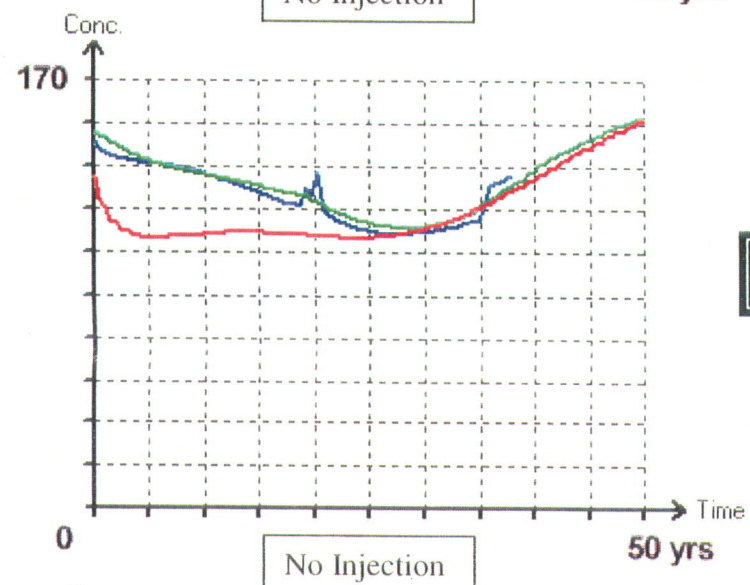
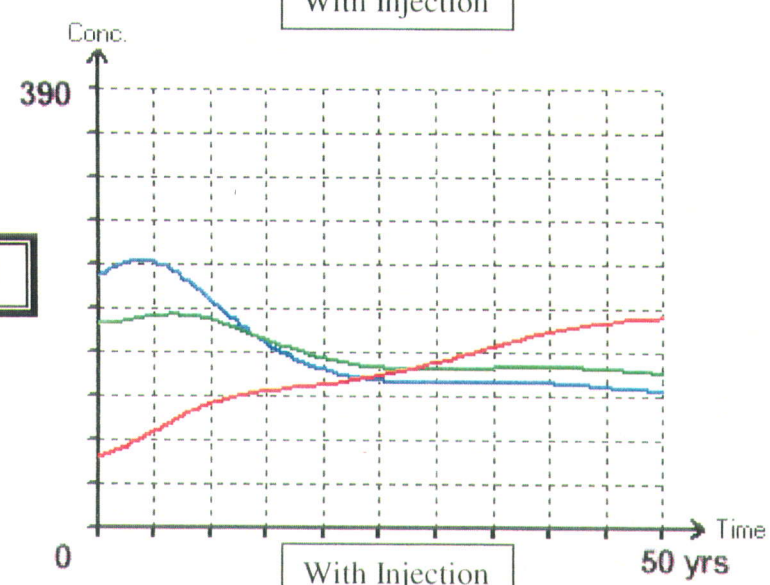
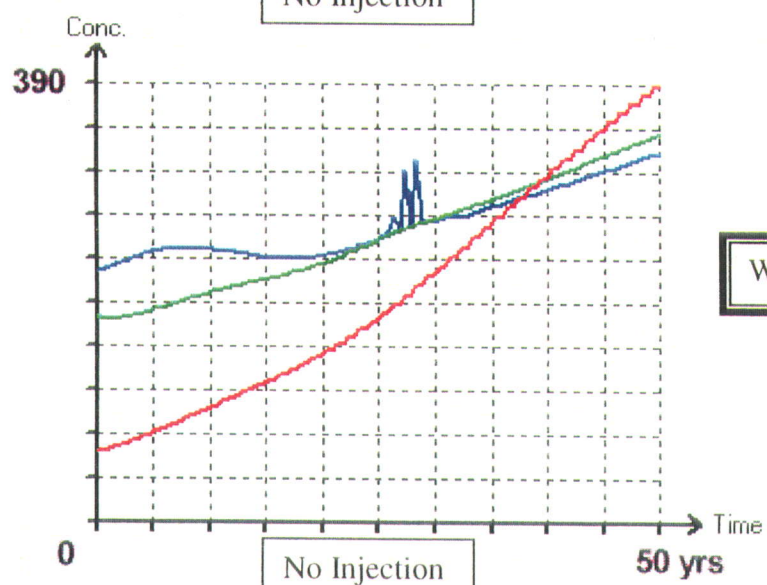
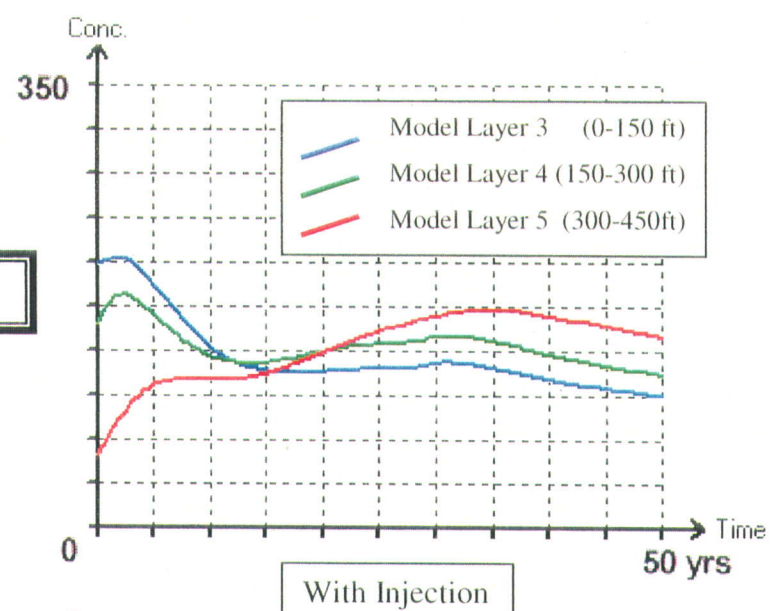
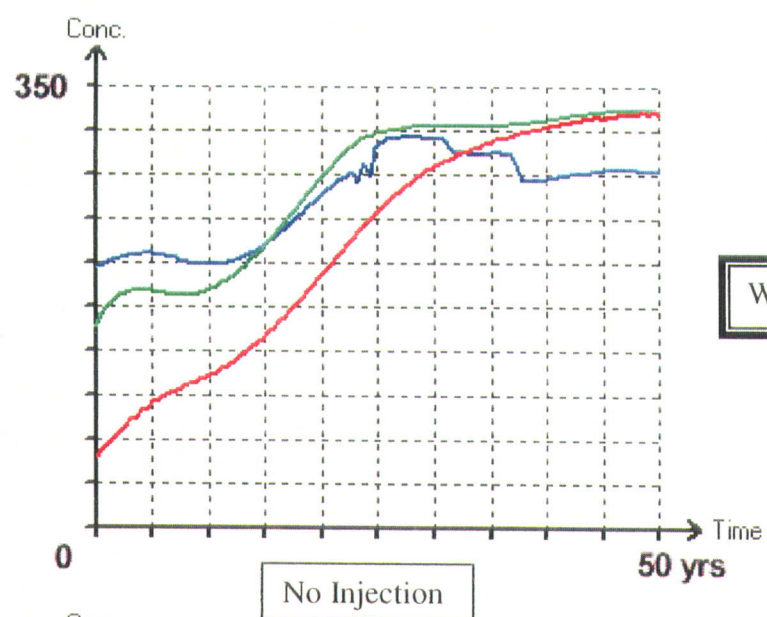
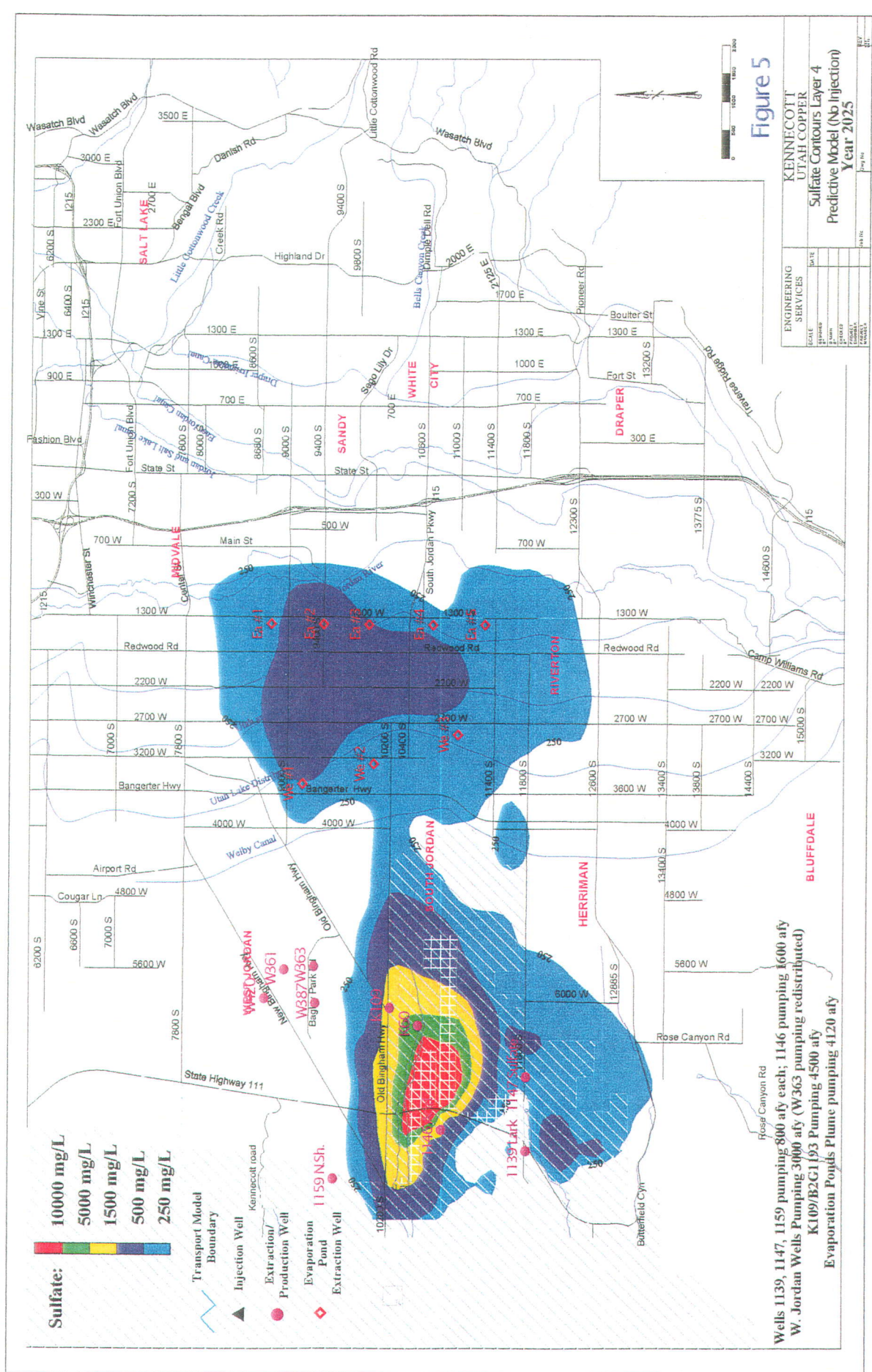
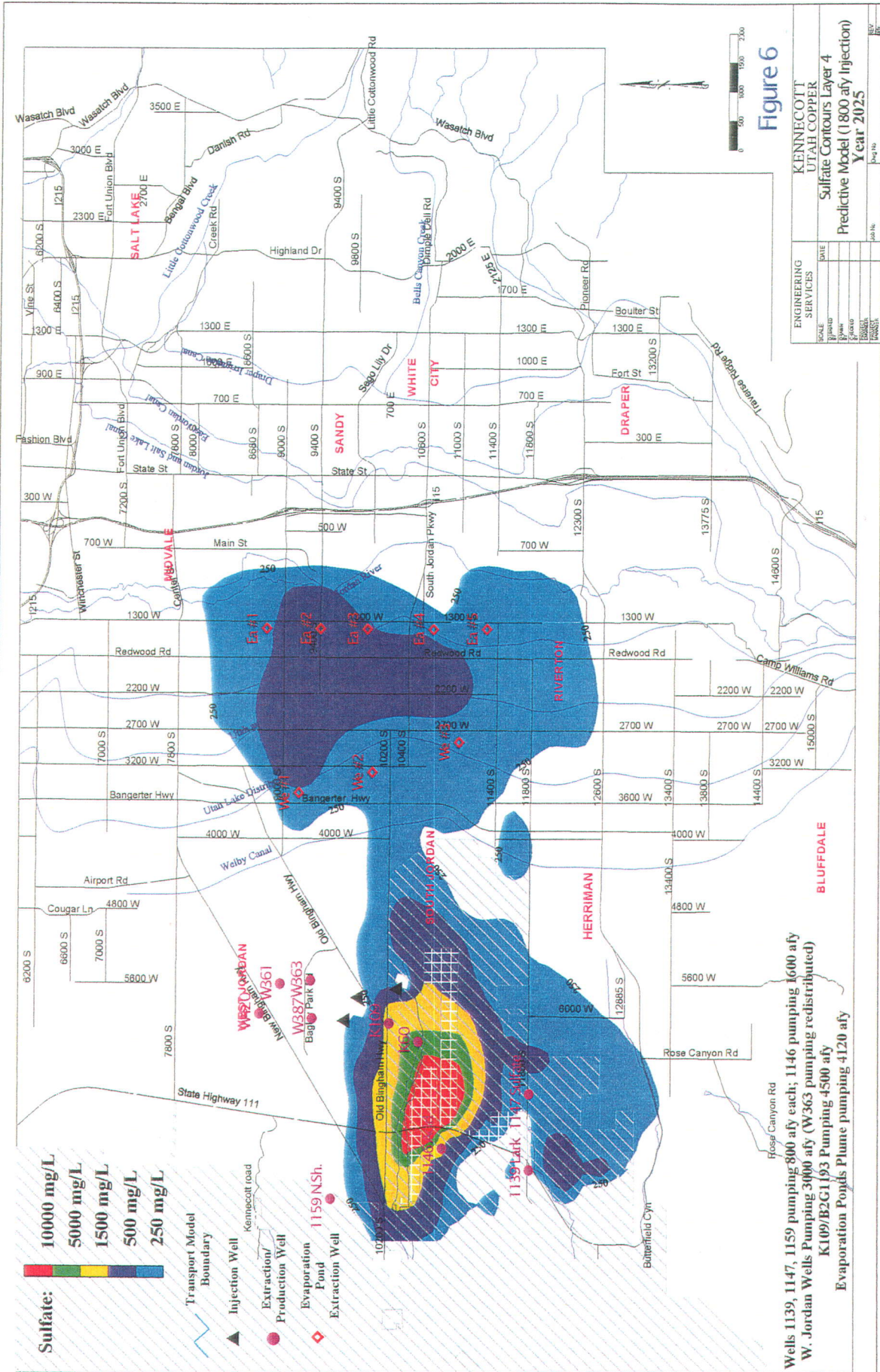
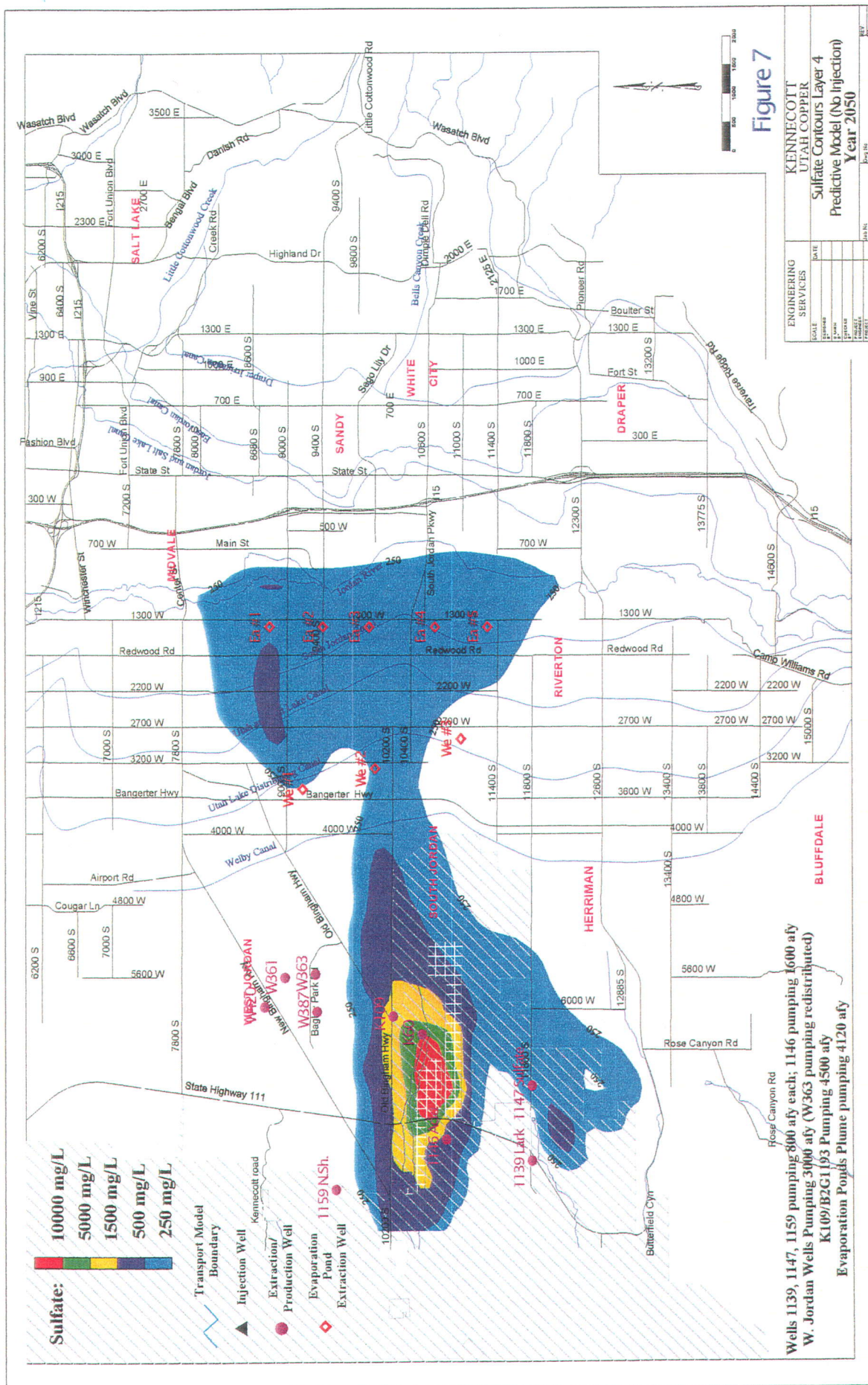


Figure 3. Time Series Sulfate Concentration (in mg/L) for Various Observation Wells (WJ pumping 3000 afy).







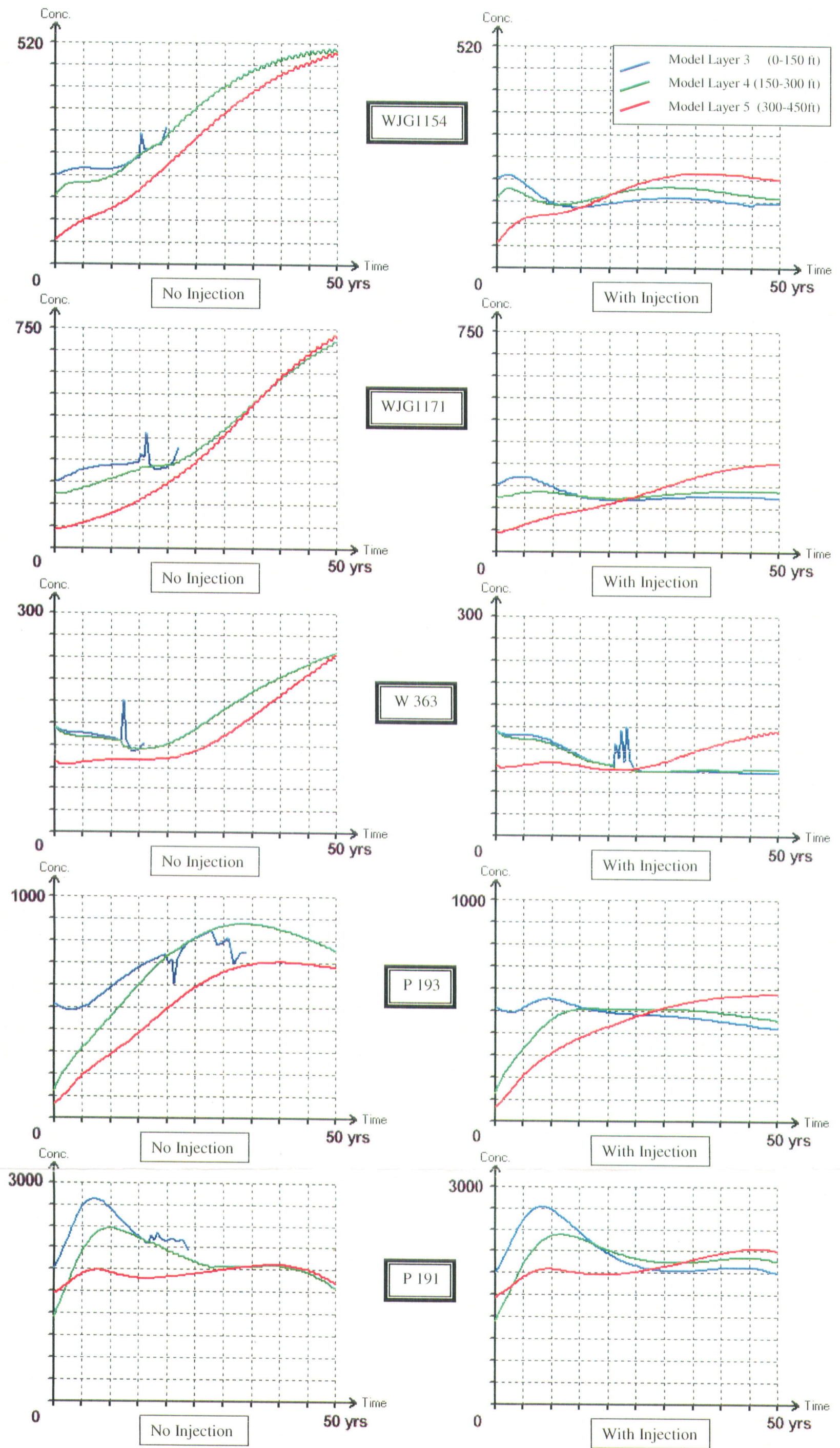
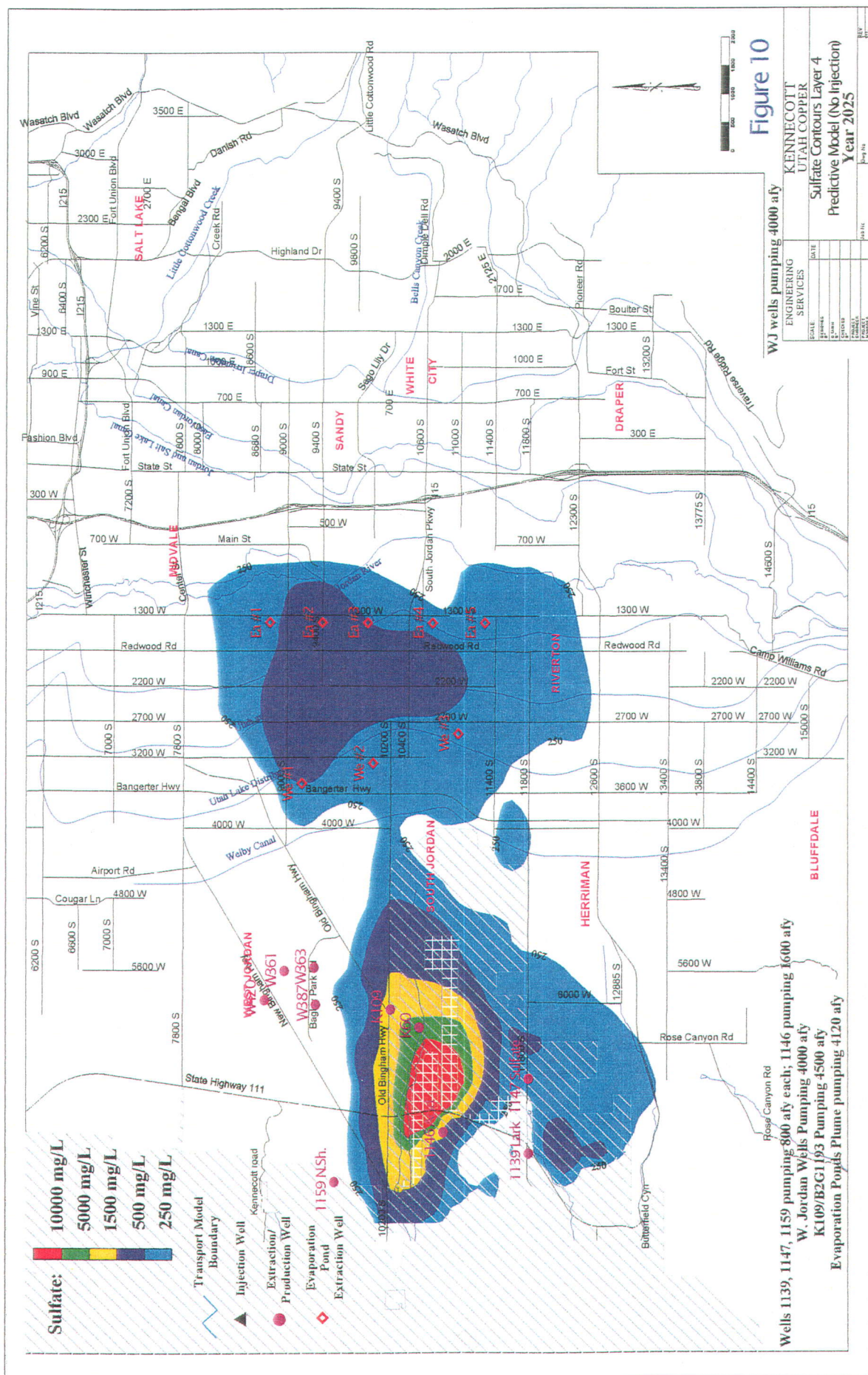
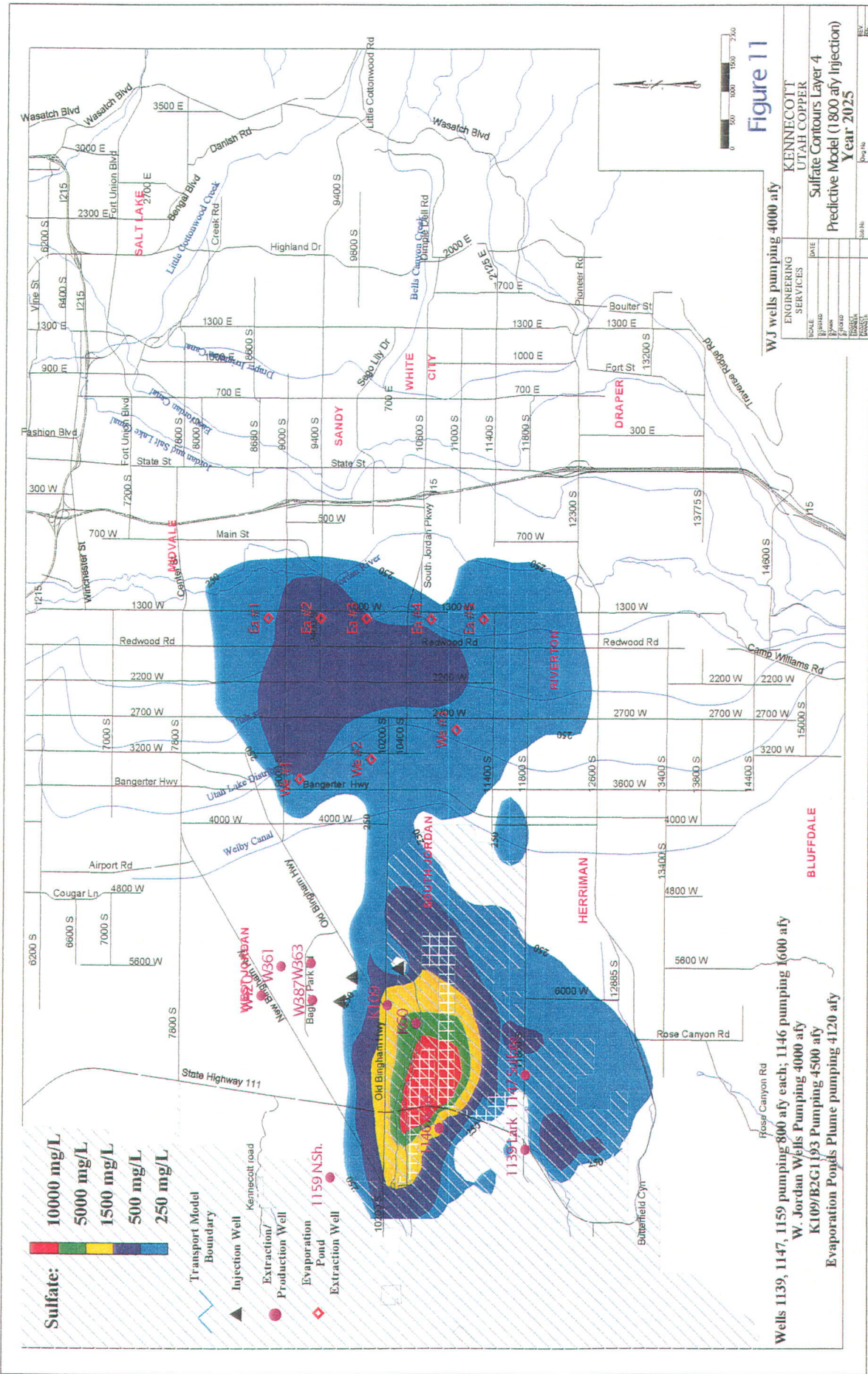


Figure 9. Time Series Sulfate Concentration (in mg/L) for Various Observation Wells (WJ pumping 4000 afy).





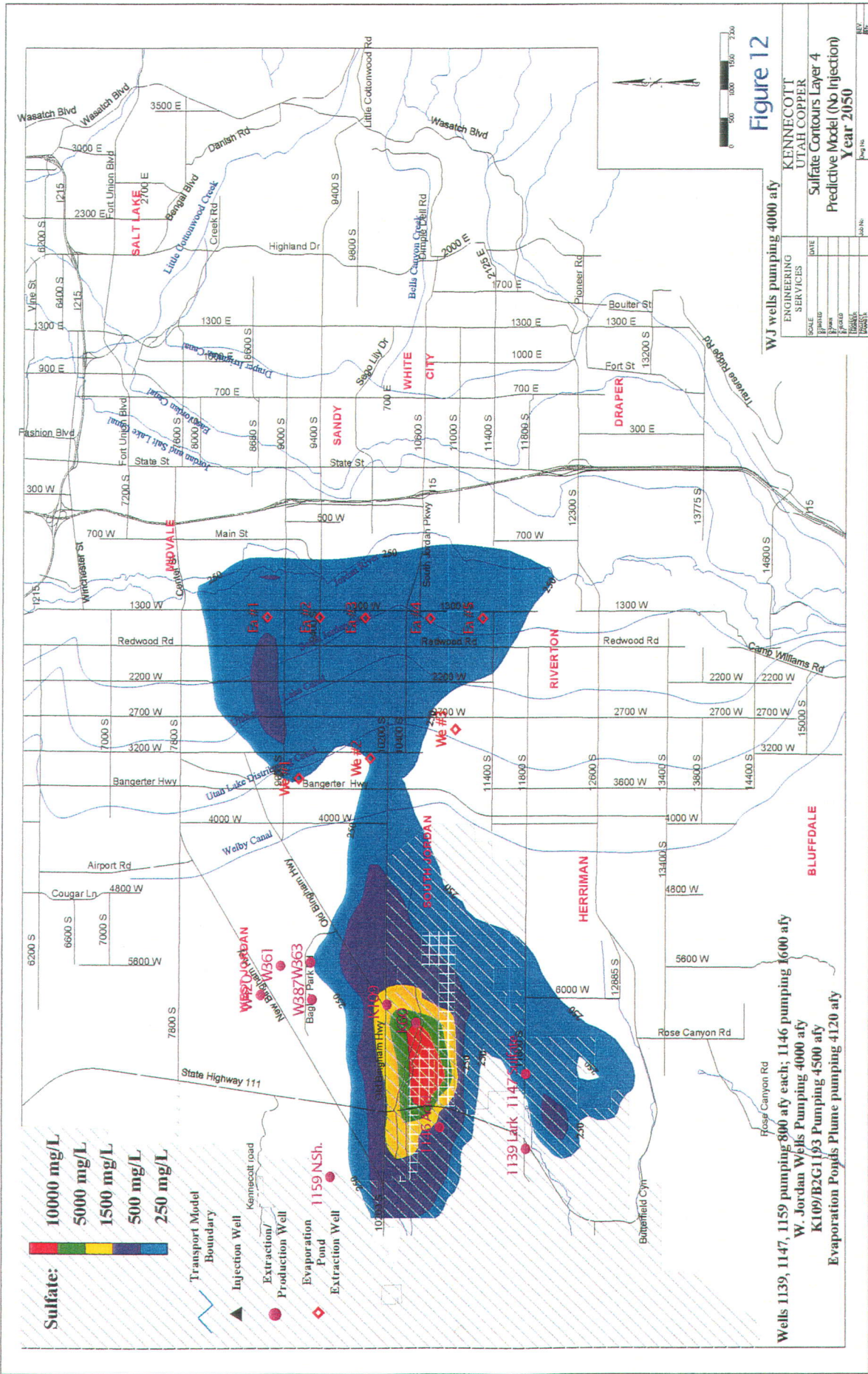


Figure 12

WJ wells pumping 4000 afy

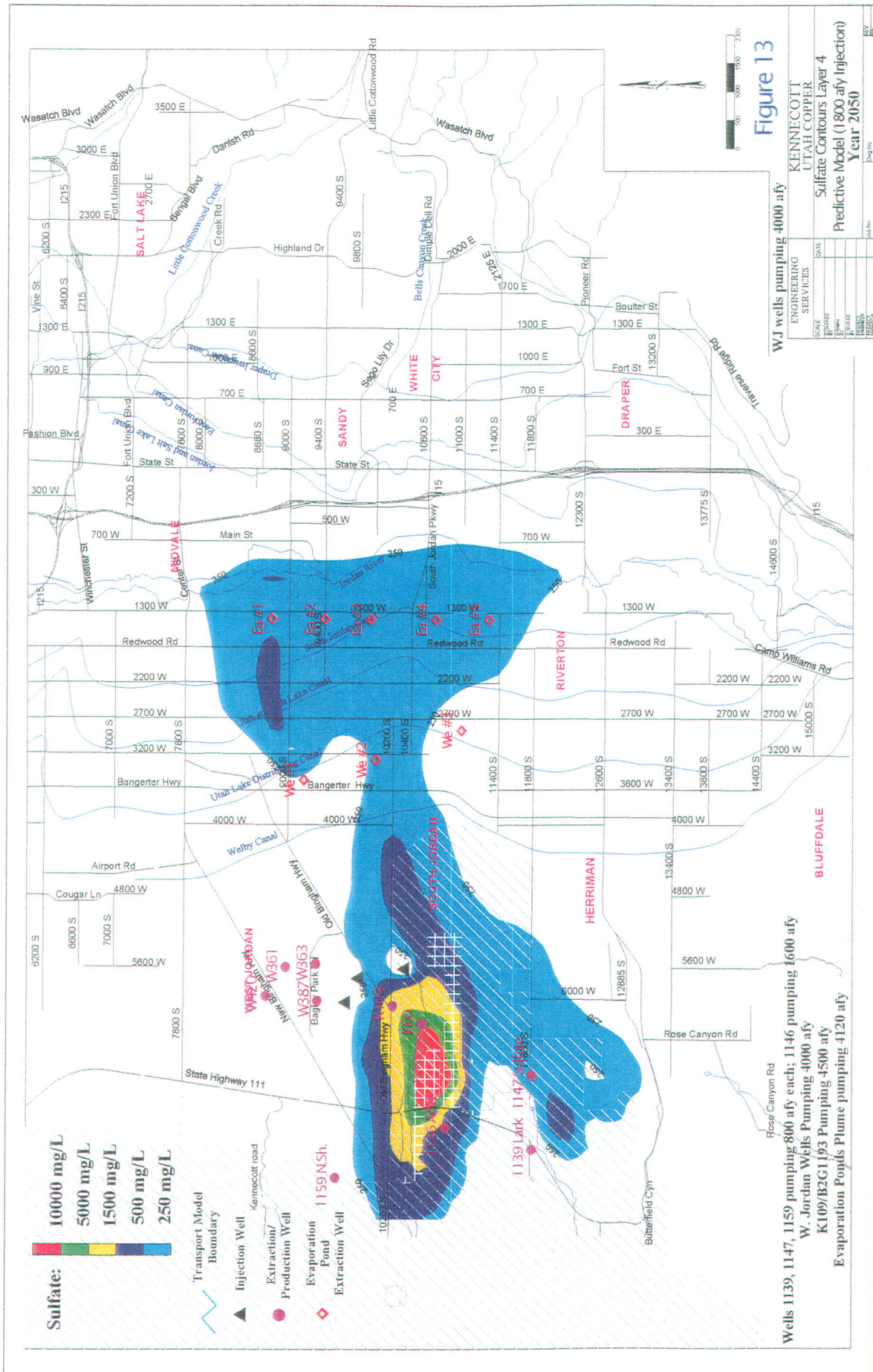
KENNECOTT
UTAH COPPER

Sulfate Contours Layer 4

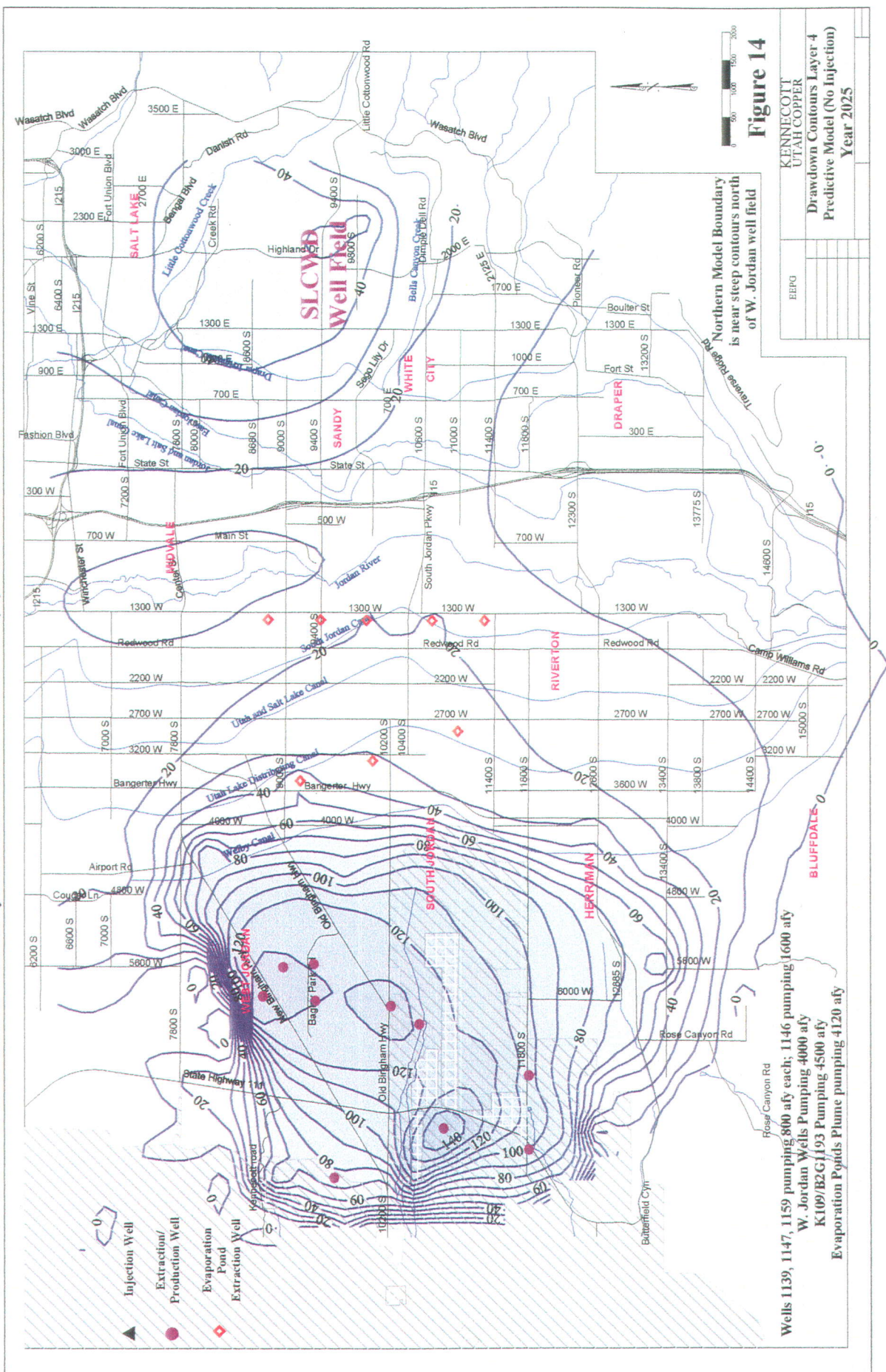
Predictive Model (No Injection)
Year 2050

ENGINEERING SERVICES	DATE
SCALE	
PLAN	
SECTION	
REVISION	
BY	
CHK	

Wells 1139, 1147, 1159 pumping 800 afy each; 1146 pumping 1600 afy
W. Jordan Wells Pumping 4000 afy
K109/B2G1193 Pumping 4500 afy
Evaporation Ponds Plume pumping 4120 afy



Layer 4 Drawdown Contours (ft) Year 2025



Layer 4 Drawdown Contours (ft) Year 2050

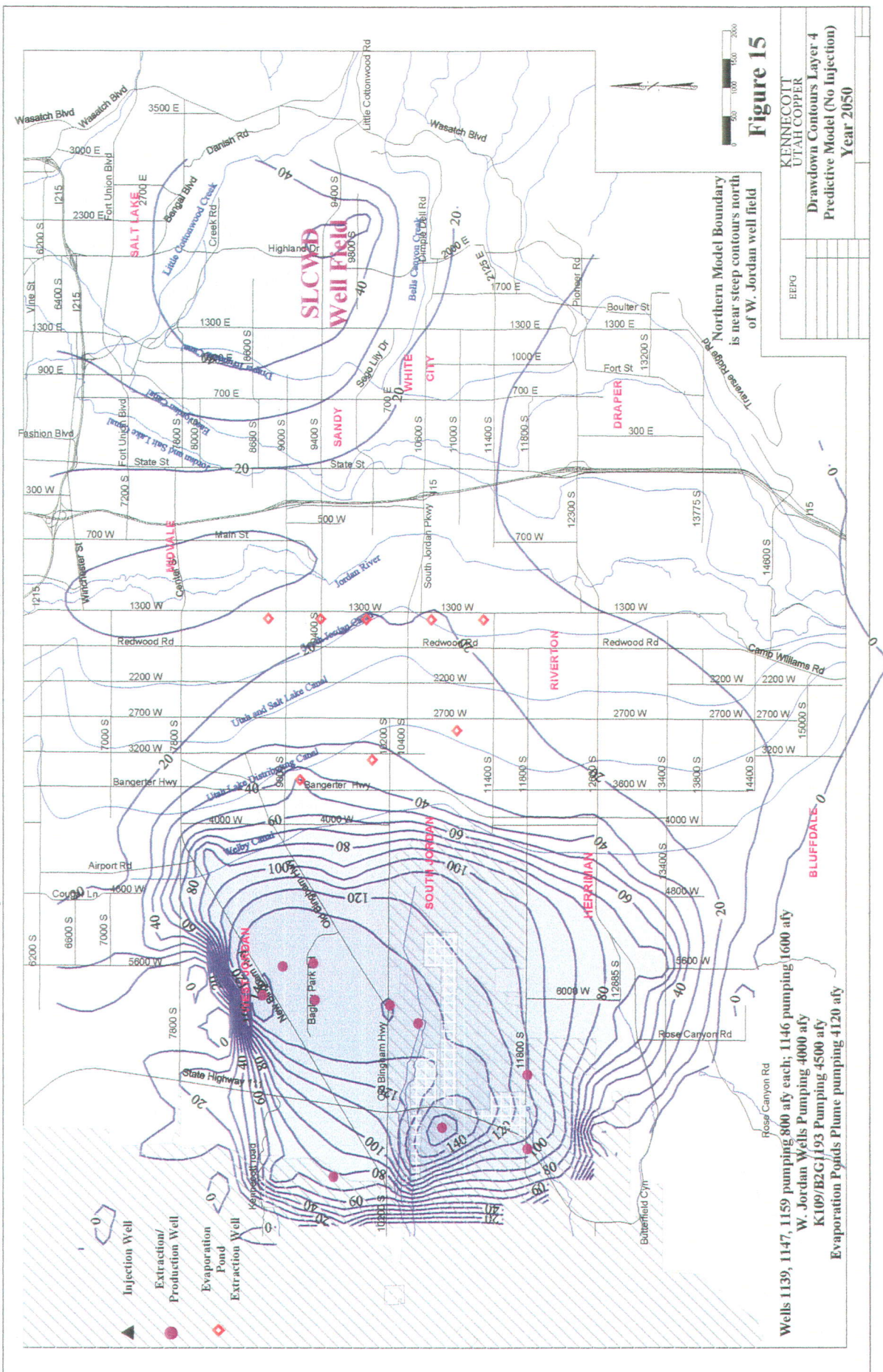


Figure 16
KENNECOTT
UTAH COPPER
Drawdown Contours Layer 4
Predictive Model (1800h) Injection
Year 2025

EBPG

Wells 1139, 1147, 1159 pumping 800 afy each; 1146 pumping 1600 afy
W. Jordan Wells Pumping 4000 afy
K109/B2G193 Pumping 4500 afy
Evaporation Ponds Plume pumping 4120 afy

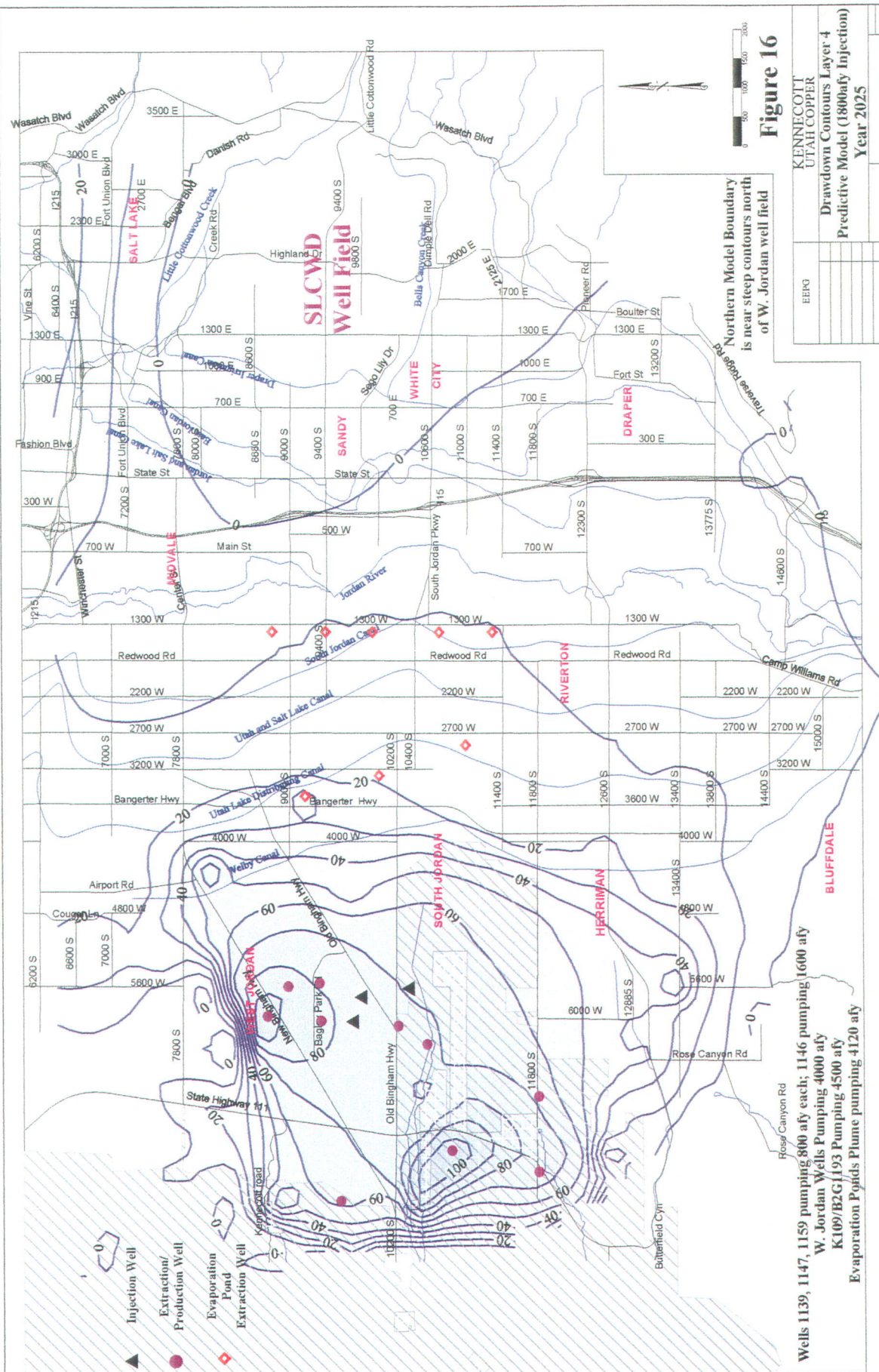


Figure 16

KENNECOTT
LIT & CO. LTD.

**Drawdown Contours Layer 4
Predictive Model (1800afy Injection)
Year 2025**

Wells 1139, 1147, 1159 pumping 800 afy each, 1146 pumping 1600 afy
W. Jordan Wells Pumping 4000 afy
K109/B2G193 Pumping 4500 afy
Evaporation Ponds Plume pumping 4120 afy

Figure 17
Drawdown Contours Layer 4
Predictive Model (1800afy Injection)
Year 2050

Legend:
 ▲ Injection Well
 ● Extraction/Production Well
 ◆ Evaporation Pond
 ◆ Extraction Well

Wells 1139, 1147, 1159 pumping 800 afy each; 1146 pumping 1600 afy
W. Jordan Wells Pumping 4000 afy
K109/B2G/193 Pumping 4500 afy
Evaporation Ponds Pumping 4120 afy

Northern Model Boundary is near steep contours north of W. Jordan well field

Scale: 0 to 2000 feet

Map Labels: SALT LAKE, SANDY, WHITE, DRAPER, RIVERTON, HERRIMAN, SOUTH JORDAN, BLUFFDALE, Wasatch Blvd, Danah Rd, Highland Dr, Bella Canyon Creek, Dimple Dell Rd, Sago Lm Dr, State St, Main St, Redwood Rd, Bangerter Hwy, Velby Canal, Hwy 12, Old Bingham Hwy, State Highway 193, Kaysport Road, Butterfield Cyn, Rose Canyon Rd, Camp Williams Rd, 13775 S, 14800 S, 15000 S, 15500 S, 16000 S, 16500 S, 17000 S, 17500 S, 18000 S, 18500 S, 19000 S, 19500 S, 20000 S, 20500 S, 21000 S, 21500 S, 22000 S, 22500 S, 23000 S, 23500 S, 24000 S, 24500 S, 25000 S, 25500 S, 26000 S, 26500 S, 27000 S, 27500 S, 28000 S, 28500 S, 29000 S, 29500 S, 30000 S, 30500 S, 31000 S, 31500 S, 32000 S, 32500 S, 33000 S, 33500 S, 34000 S, 34500 S, 35000 S, 35500 S, 36000 S, 36500 S, 37000 S, 37500 S, 38000 S, 38500 S, 39000 S, 39500 S, 40000 S, 40500 S, 41000 S, 41500 S, 42000 S, 42500 S, 43000 S, 43500 S, 44000 S, 44500 S, 45000 S, 45500 S, 46000 S, 46500 S, 47000 S, 47500 S, 48000 S, 48500 S, 49000 S, 49500 S, 50000 S, 50500 S, 51000 S, 51500 S, 52000 S, 52500 S, 53000 S, 53500 S, 54000 S, 54500 S, 55000 S, 55500 S, 56000 S, 56500 S, 57000 S, 57500 S, 58000 S, 58500 S, 59000 S, 59500 S, 60000 S, 60500 S, 61000 S, 61500 S, 62000 S, 62500 S, 63000 S, 63500 S, 64000 S, 64500 S, 65000 S, 65500 S, 66000 S, 66500 S, 67000 S, 67500 S, 68000 S, 68500 S, 69000 S, 69500 S, 70000 S, 70500 S, 71000 S, 71500 S, 72000 S, 72500 S, 73000 S, 73500 S, 74000 S, 74500 S, 75000 S, 75500 S, 76000 S, 76500 S, 77000 S, 77500 S, 78000 S, 78500 S, 79000 S, 79500 S, 80000 S, 80500 S, 81000 S, 81500 S, 82000 S, 82500 S, 83000 S, 83500 S, 84000 S, 84500 S, 85000 S, 85500 S, 86000 S, 86500 S, 87000 S, 87500 S, 88000 S, 88500 S, 89000 S, 89500 S, 90000 S, 90500 S, 91000 S, 91500 S, 92000 S, 92500 S, 93000 S, 93500 S, 94000 S, 94500 S, 95000 S, 95500 S, 96000 S, 96500 S, 97000 S, 97500 S, 98000 S, 98500 S, 99000 S, 99500 S, 100000 S, 100500 S, 101000 S, 101500 S, 102000 S, 102500 S, 103000 S, 103500 S, 104000 S, 104500 S, 105000 S, 105500 S, 106000 S, 106500 S, 107000 S, 107500 S, 108000 S, 108500 S, 109000 S, 109500 S, 110000 S, 110500 S, 111000 S, 111500 S, 112000 S, 112500 S, 113000 S, 113500 S, 114000 S, 114500 S, 115000 S, 115500 S, 116000 S, 116500 S, 117000 S, 117500 S, 118000 S, 118500 S, 119000 S, 119500 S, 120000 S, 120500 S, 121000 S, 121500 S, 122000 S, 122500 S, 123000 S, 123500 S, 124000 S, 124500 S, 125000 S, 125500 S, 126000 S, 126500 S, 127000 S, 127500 S, 128000 S, 128500 S, 129000 S, 129500 S, 130000 S, 130500 S, 131000 S, 131500 S, 132000 S, 132500 S, 133000 S, 133500 S, 134000 S, 134500 S, 135000 S, 135500 S, 136000 S, 136500 S, 137000 S, 137500 S, 138000 S, 138500 S, 139000 S, 139500 S, 140000 S, 140500 S, 141000 S, 141500 S, 142000 S, 142500 S, 143000 S, 143500 S, 144000 S, 144500 S, 145000 S, 145500 S, 146000 S, 146500 S, 147000 S, 147500 S, 148000 S, 148500 S, 149000 S, 149500 S, 150000 S, 150500 S, 151000 S, 151500 S, 152000 S, 152500 S, 153000 S, 153500 S, 154000 S, 154500 S, 155000 S, 155500 S, 156000 S, 156500 S, 157000 S, 157500 S, 158000 S, 158500 S, 159000 S, 159500 S, 160000 S, 160500 S, 161000 S, 161500 S, 162000 S, 162500 S, 163000 S, 163500 S, 164000 S, 164500 S, 165000 S, 165500 S, 166000 S, 166500 S, 167000 S, 167500 S, 168000 S, 168500 S, 169000 S, 169500 S, 170000 S, 170500 S, 171000 S, 171500 S, 172000 S, 172500 S, 173000 S, 173500 S, 174000 S, 174500 S, 175000 S, 175500 S, 176000 S, 176500 S, 177000 S, 177500 S, 178000 S, 178500 S, 179000 S, 179500 S, 180000 S, 180500 S, 181000 S, 181500 S, 182000 S, 182500 S, 183000 S, 183500 S, 184000 S, 184500 S, 185000 S, 185500 S, 186000 S, 186500 S, 187000 S, 187500 S, 188000 S, 188500 S, 189000 S, 189500 S, 190000 S, 190500 S, 191000 S, 191500 S, 192000 S, 192500 S, 193000 S, 193500 S, 194000 S, 194500 S, 195000 S, 195500 S, 196000 S, 196500 S, 197000 S, 197500 S, 198000 S, 198500 S, 199000 S, 199500 S, 200000 S, 200500 S, 201000 S, 201500 S, 202000 S, 202500 S, 203000 S, 203500 S, 204000 S, 204500 S, 205000 S, 205500 S, 206000 S, 206500 S, 207000 S, 207500 S, 208000 S, 208500 S, 209000 S, 209500 S, 210000 S, 210500 S, 211000 S, 211500 S, 212000 S, 212500 S, 213000 S, 213500 S, 214000 S, 214500 S, 215000 S

Wells 1139, 1147, 1159 pumping 800 afy each; 1146 pumping 1600 afy
W. Jordan Wells Pumping 4000 afy
K109/B2G1193 Pumping 4560 afy
Evaporation Ponds Plume pumping 4120 afy.

APPENDIX D

Groundwater Rights in the Affected Area

OWNER	USES	WRNUM	STATUS	PRIORITY	FLOW (CFS)	LOCATION	AREA CODE
ABEYTA, CANDIDA F. AND LOUISA	IDS	59 4063	APPLPAD	19740627	0.04500	S 100 E 967 NWSL 3S 1W 4	59
ACCOUNTING AND MANAGEMENT ASSOCIATES		59 2555	UGWCDS	19330000	0.22000	N 52 E 65 W4SL 3S 1W 2	59
ACCOUNTING AND MANAGEMENT ASSOCIATES		59 2556	UGWCDS	19330000	0.22000	N 50 E 133 W4SL 3S 1W 2	59
AFCO DEVELOPMENT COMPANY		59 2282	UGWCDS	18940000	0.02200	N 1270 W 682 SWSL 3S 1W 7	59
AFCO DEVELOPMENT CORPORATION	D	59 4035	APPLPAD	19740418	5.17000	E 2500 W4SL 3S 1W 7	59
AFCO DEVELOPMENT CORPORATION	D	59 4035	APPLPAD	19740418	5.17000	S 1450 N4SL 3S 1W 7	59
AKITA, FRANK K.	I	59 1606	APPLCERT	19610521	2.71000	N 1240 W 1305 SESL 3S 1W20	59
ALLDREDGE, CLIFFORD L.	I S	59 4525	APPLCERT	19770707	0.04500	N 2613 E 2910 SWSL 3S 1W14	59
ALLEN, JAMES T. & KATHY E.	IDS	59 4255	APPLCERT	19760716	0.01500	S 125 W 163 NESL 3S 1W31	59
ALLEN, R. THAD	I	59 5217	APPLPAD	19870325	0.01500	N 610 E 965 W4SL 3S 1W11	59
ALLISON, CHARLES L. (JR.)		59 1611	APPLPAD	19610529	2.00000	S 2616 E 1607 NWSL 3S 1W 5	59
ALLISON, CHARLES, L. (JR.)		59 1683	APPLPAD	19630130	0.01500	S 2616 E 1657 NWSL 3S 1W 5	59
ALT, RAYMOND (JR.)	IDS	59 4643	APPLPAD	19780523	0.01500	N 200 E 920 SWSL 3S 1W20	59
ALVERSON, VERNELL		59 1643	APPLPAD	19610908	0.10000	S 38 W 1447 E4SL 3S 1W 4	59
AMES, STEPHEN L.	IDS	59 4333	APPLCERT	19761115	0.02500	N 706 E 1413 W4SL 3S 1W16	59
ANDERSON, DAVIS N.	IDS	59 5206	APPLCERT	19860917	0.01500	N 625 W 175 S4SL 3S 1W29	59
ANDERSON, MAX W.	I S	59 4418	APPLCERT	19770216	0.23300	S 1137 E 163 W4SL 3S 1W11	59
ANDERSON, MAX W. AND MAURINE M.		59 2524	UGWCDS	19010000	0.03300	N 1370 E 174 SWSL 3S 1W11	59
ANDERSON, NORMAN K.	I	59 4801	APPLPAD	19810302	0.01500	S 335 W 2145 E4SL 3S 1W16	59
ANDREASON, WILLIAM K.	ID O	59 3839	APPLPAD	19720412	0.01500	N 100 W 100 SESL 3S 2W 8	59
ANDREAGG, ANNA	IDS	59 4097	APPLPAD	19741029	0.04500	S 700 E 1580 NWSL 3S 1W16	59
ATWOOD, JAMES		59 1282	APPLDIS		0.01500	S 2435 E 10 N4SL 3S 1W 5	59
ATWOOD, JAMES M.	I S	59 598	APPLNPR	19471007	0.01500	N 200 W 1975 E4SL 3S 1W 5	59
BAKER, JOHN R.	IDS	59 5047	APPLPAD	19840606	0.01500	S 200 W 1090 N4SL 3S 1W28	59
BALVIN, SUSAN D.	IDS	59 4947	APPLPAD	19830526	0.05000	N 1300 E 1200 SWSL 3S 1W 5	59
BARKER, CLYDE		59 1117	APPLDIS		0.01500	N 1224 E 90 S4SL 2S 1W34	59
BARLOW, JESSE M.	IDS	59 4749	APPLCERT	19790921	0.01500	N 1184 E 2086 W4SL 3S 1W 4	59
BARLOW, LYMAN J.	I S	59 4472	APPLCERT	19770504	0.01500	N 1501 E 49 S4SL 3S 1W29	59
BASTIAN, E. P.	IDS	59 4118	APPLCERT	19750130	0.01500	S 3286 W 2213 NESL 3S 2W32	59
BATEMAN, DEON R.	IDS	59 4147	APPLCERT	19750609	0.01500	S 332 W 699 N4SL 3S 1W30	59
BATEMAN, GLENN W.	ID	59 4438	APPLCERT	19770304	0.01500	N 1020 E 429 W4SL 3S 1W16	59
BAUER, MERRILL R.	I S	59 3810	APPLCERT	19710603	0.100	S 1330 E 260 NWSL 2S 1W28	59
BECKSTEAD, DALE	I S	59 5473	UGWC	1934	0.00000	S 1255 W 325 N4SL 3S 1W26	59
BECKSTEAD, EDWARD B.		59 2589	UGWCDS	18990000	0.02200	S 1207 W 166 NESL 3S 1W27	59
BECKSTEAD, EDWARD B.		59 2322	UGWCDS	19181100	0.00100	S 110 W 670 NESL 3S 1W29	59
BECKSTEAD, STERLING M.	ID	59 4495	APPLCERT	19770601	0.09000	N 1048 E 179 SWSL 3S 1W14	59
BEERS, KENNETH D.	ID O	59 4805	APPLCERT	19810220	0.06700	N 66 E 592 SWSL 2S 1W26	59
BELCHAK TRUSTEES, THOMAS A. & CHRISTINE J.	IDS	59 5138	APPLAPP	19850821	0.10000	N 550 E 800 SWSL 3S 1W 7	59
BELCHAK, THOMAS A.	IDS	59 5251	APPLAPP	19880122	0.01500	N 550 E 950 SWSL 3S 1W 7	59
BELCHAK, THOMAS A. AND CHRISTINE J.	IDS	59 5138	APPLAPP	19920205	0.10000	N 550 E 800 SWSL 3S 1W 7	59
BENNETT, BRENT	IDS	59 4192	APPLCERT	19750924	0.01500	N 438 W 145 S4SL 3S 1W29	59
BENTON, JAMES O.	IDS	59 4321	APPLCERT	19760920	0.01500	S 180 E 1292 N4SL 3S 1W32	59
BETTS, REID G. AND LUCILLE B.	DS	59 2375	UGWC	19060000	0.03300	N 2092 W 200 SESL 3S 1W10	59
BIGLER, LOUIS B.	ID O	59 1007	APPLNPR	19520408	0.01500	S 592 W 163 NESL 3S 1W 3	59
BIGLER, LOUIS B.	I	59 1559	APPLDIS	19600428	1.00000	S 1320 W 1470 NESL 3S 1W 3	59
BIGLER, LOUIS B.	I	59 3246	UGWC	19220000	1.00000	S 827 W 1237 NESL 3S 1W 3	59
BIGLER, LOUIS B.	I	59 2045	UGWCDS	19040000	0.01800	S 340 W 198 NESL 3S 1W 3	59
BIGLER, LOUIS B. AND HAZEL A.	I	59 2434	UGWC	19270000	2.00000	N 147 W 706 E4SL 3S 1W 3	59
BIGLER, LOUIS B. AND HAZEL A.	I	59 2075	UGWC	19060000	0.75000	S 330 W 1320 NESL 3S 1W 3	59
BILLS, CECELIA M.	D	59 2404	UGWC	19170000	0.01100	S 2550 W 2445 NESL 3S 1W29	59
BLAND BROTHERS INCORPORATED	ID	59 4783	APPLCERT	19801203	0.06500	S 160 W 638 N4SL 3S 1W 3	59
BLAND, BRIAN AND SHIRLEE	IDS	59 4041	APPLCERT	19740501	0.01500	S 247 W 785 N4SL 3S 1W32	59
BLOOD, KAY H.	S	59 2183	UGWC	19200000	0.03300	N 1940 W 936 SESL 3S 1W20	59
BOARD OF EDUCATION (JORDAN SCHOOL DISTRICT)		59 2003	UGWCDS	19030000	0.01100	N 112 W 420 SESL 2S 1W33	59

BOARD OF EDUCATION (JORDAN SCHOOL DISTRICT)	59 2849	UGWCDIS	1909	0.01800	S 1152 W 77 NESL 3S 1W15	59
BOARD OF EDUCATION (JORDAN SCHOOL DISTRICT)	59 2491	UGWCDIS	19040000	0.04500	S 466 W 352 E4SL 3S 1W 3	59
BODELL, NOREEN S.	59 1605	APPLCERT	19610511	1.80000	S 1213 E 350 N4SL 3S 2W35	59
BOOTH BRENT T. & KAREN N.	59 5240	APPLCERT	19870903	0.01500	N 1972 W 1219 SESL 3S 1W29	59
BOOTH, WILLIAM H.	59 1302	APPLNPR	19570131	0.01500	N 635 E 145 SWSL 3S 1W 5	59
BOSSHARDT, JOHN	59 1965	UGWC	19330800	0.01100	S 93 E 127 N4SL 3S 1W21	59
BOWLES, ARVID W. AND JOYCE G.	59 5359	APPLCERT	19610411	0.00000	S 1218 W 1417 N4SL 3S 2W35	59
BOWLES, ROBERT I.	59 4751	APPLCERT	19561008	1.16000	N 353 E 666 NWSL 3S 2W35	59
BOWLES, ROBERT I.	59 1156	APPLCERT	19680930	0.61000	N 448 E 1397 W4SL 3S 2W35	59
BOWLES, ROBERT I.	59 4751	APPLCERT	19561008	1.16000	S 2531 E 1083 NWSL 3S 2W35	59
BOWLES, ROBERT I.	59 4751	APPLAPP	19880304	1.16000	S 300 E 710 NWSL 3S 2W35	59
BOWLES, WILLIAM C. AND KHYVA J.	59 4309	APPLCERT	19791116	0.01400	N 185 E 1100 SWSL 3S 1W20	59
BOWMAN III, HAROLD I.	59 4957	APPLAPP	19830802	0.05000	S 1420 E 810 N4SL 3S 1W27	59
BRADLEY, JAN	59 5248	APPLAPP	19910501	0.01500	N 450 W 450 E4SL 3S 1W28	59
BRADY, L. PEIRCE	59 1640	APPLUNAP	19610830	2.00000	N 200 E 10 S4SL 3S 1W29	59
BRECKON, DAVID C.	59 84	UGWC	19361112	0.03400	S 1401 W 290 N4SL 3S 1W15	59
BRECKON, DAVID C.	59 1847	UGWCDIS	191207	0.18900	S 1402 W 2941 NESL 3S 1W15	59
BRIGHT, CHARLES W.	59 1664	APPLCERT	19620321	0.00400	S 3410 W 202 N4SL 3S 1W29	59
BRIGHTON AND NORTH POINT IRRIGATION COMPANY	59 5607	APPLUNAP	19990422	0.00000	S 770 E 1490 NWSL 3S 1W26	59
BRINGHURST, J. OWEN AND KAREN	59 4076	APPLCERT	19740723	0.01500	N 1127 W 264 S4SL 3S 1W20	59
BRINKERHOFF, CLAUD	59 1969	UGWC	19330000	0.00200	N 1050 E 110 SWSL 2S 1W26	59
BRINKERHOFF, MORRIS H. AND BRENDA A.	59 3945	APPLCERT	19720425	0.01500	N 201 W 542 S4SL 3S 1W20	59
BROADHEAD, ARVIS E.	59 2154	UGWC	19310600	0.11100	S 3303 W 203 N4SL 3S 1W28	59
BROWN, DARREL H.	59 1275	APPLNPR	19560709	0.01500	S 431 E 29 NWSL 3S 1W32	59
BROWN, LULA	59 1951	UGWCDIS	1903	0.02700	N 1445 W 220 SESL 2S 1W27	59
BUHLER, JOSEPH K.	59 1116	APPLCERT	19530709	0.03200	N 110 E 1630 SWSL 3S 1W 8	59
BUNKER, RUSSELL M. AND NANETTE D.	59 3825	APPLAPP	19710503	0.01500	N 418 W 1650 SESL 3S 2W33	59
BURRUP, RONALD L.	59 5215	APPLCERT	19870116	0.05000	S 389 W 1049 NESL 3S 1W16	59
BURTON, MILLAN G.	59 3608	APPLCERT	19700102	0.030	N 330 E 155 W4SL 2S 1W28	59
BUSH, GUSTAVA E.	59 1966	UGWCDIS	1926	0.02200	N 177 W 1547 SESL 3S 1W19	59
BUSHNELL, LEROY C.	59 980	APPLDIS	19510912	0.01500	N 1230 W 895 E4SL 3S 1W16	59
BUTCHER, WANEMA C.	59 4830	APPLAPP	19810714	0.01500	S 45 W 490 E4SL 3S 1W16	59
BUTTERFIELD, CINDY B.	59 5091	APPLAPP	19890622	0.01500	S 200 W 60 N4SL 3S 1W30	59
BUTTERFIELD, CRAIG E.	59 4386	APPLCERT	19800801	0.01500	S 75 W 237 E4SL 3S 1W30	59
BUTTERFIELD, ELDON	59 3995	APPLAPP	19771003	0.01500	S 90 W 980 NESL 3S 1W30	59
BUTTERFIELD, ELDON AND SHIRLEY	59 2318	UGWC	19330200	0.00000	S 141 W 920 NESL 3S 1W30	59
BUTTERFIELD, JAMES S.	59 1188	APPLCERT	19540911	1.18000	N 50 E 40 SWSL 3S 2W26	59
BUTTERFIELD, WAYNE W.	59 3272	APPLUNAP	19660211	1.50000	N 50 E 850 SWSL 3S 2W35	59
BUTTERFIELD, WAYNE W.	59 3404	APPLUNAP	19660916	0.50000	N 50 E 850 SWSL 3S 2W35	59
BYTHEWAY, QUINTIN H.	59 1690	APPLAPP	19630301	0.01500	S 166 E 2499 W4SL 2S 1W34	59
CAHOON, JAY C.	59 2169	UGWCDIS	19201100	0.02200	S 1178 W 148 N4SL 3S 1W 4	59
CAIN, DONEL D. AND VELMA M.	59 1872	UGWCDIS	1911	0.01300	S 5248 W 2823 NESL 3S 1W15	59
CALLISTER REAL ESTATE AND INVESTMENT CORPORATION	59 4971	TEMPEXP	19830927	0.01500	N 184 E 1100 SWSL 3S 1W20	59
CALLISTER REAL ESTATE AND INVESTMENT CORPORATION	59 4970	APPLAPP	19830927	0.01500	N 184 E 1100 SWSL 3S 1W20	59
CANDALOT, GENE L.	59 3941	APPLCERT	19730418	0.01500	S 173 W 1406 N4SL 3S 1W29	59
CARDWELL, ROBERT L. (FAMILY TRUST)	59 2256	UGWC	19180000	0.08900	N 1224 W 308 S4SL 3S 1W29	59
CARTER, JAMES W.	59 2644	UGWCDIS	18990000	0.007	S 135 W 2050 N4SL 2S 1W28	59
CARTER, MYRNA B. (FAMILY TRUST AGREEMENT)	59 5581	APPLAPP	19980424	0.00000	N 1330 W 1050 S4SL 3S 2W35	59
CARTER, MYRNA B. (FAMILY TRUST AGREEMENT)	59 5581	APPLAPP	19980424	0.00000	N 1450 W 1230 S4SL 3S 2W35	59
CASH, LAVON ISAKSON	59 2608	UGWCDIS	19050000	0.01100	S 2464 E 1558 NWSL 3S 1W14	59
CAVENDER, THELMA	59 404	APPLNPR	19440515	0.01500	N 3068 E 118 SWSL 2S 1W26	59
CHARON, JUNE	59 564	APPLNPR	19470424	0.01500	S 101 E 899 W4SL 3S 1W21	59
CHAVEZ, JOSE	59 420	APPLDIS	19440927	0.01500	S 400 E 1280 NWSL 2S 1W35	59
CHAVEZ, TONY A.	59 4357	DIL	1903	4.00000	N 1755 E 1655 W4SL 3S 1W11	59
CHAVEZ, TONY A.	59 4280	DIL	1903	4.00000	N 1380 E 1665 W4SL 3S 1W11	59
CHIVERS, MELANIE	59 3940	APPLCERT	19730404	0.01500	N 1096 E 27 S4SL 3S 2W34	59
CHRISTOFFERSON, JOHN B. AND CHERI	59 4776	APPLAPP	19801004	0.01500	N 230 E 390 S4SL 3S 2W34	59

DANSIE, JESSE H.	ID	59 4619	APPLWD	19780306	2.58000	S 1500 E 1400 NWSL 3S 2W34	59
DANSIE, JESSE H.	ID	59 1249	APPLWD	19721017	6.37300	S 1250 E4SL 3S 2W33	59
DANSIE, JESSE H.	ID	59 4619	APPLWD	19780306	2.58000	S 2600 W 1450 NESL 3S 2W34	59
DANSIE, JESSE H.	ID	59 4619	APPLAP	19721017	2.58000	N 2300 E 1500 SWSL 3S 2W33	59
DANSIE, JESSE H.	ID	59 4619	APPLAP	19721017	2.58000	N 1900 E 2400 SWSL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 662 E 44 NWSL 4S 2W 3	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 758 E 1350 W4SL 3S 2W33	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 593 E 1362 W4SL 3S 2W33	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 1159 E 2344 W4SL 3S 2W33	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	N 1239 E 872 SWSL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 52 E 5 W4SL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	N 2059 W 492 S4SL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	N 279 W 1167 S4SL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	N 99 W 327 S4SL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 2818 W 1395 NESL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 1363 E 1358 NWSL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	N 1485 W 244 S4SL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	N 1412 W 7 SESL 3S 2W33	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLCET	19541117	1.19000	S 740 E 1330 W4SL 3S 2W33	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 1428 W 1425 NESL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 2210 W 1372 NESL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 1347 W 2614 NESL 3S 2W34	59
DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	19980728	1.62700	S 837 W 48 N4SL 4S 2W 3	59
DANSIE, KENT ALMA	IDS	59 4928	APPLAP	19830228	0.01500	N 300 W 1950 SESL 3S 2W34	59
DANSIE, RICHARD PAUL	IDS	59 5383	FIXDAPP	19930104	0.00000	N 1300 W 100 S4SL 3S 2W34	59
DANSIE, TOM	IDS	59 4807	APPLAPD	19810318	0.01500	N 350 W 1850 SESL 3S 2W34	59
DAUSE, BILL	D	59 4100	APPLAPD	19741107	0.01500	S 100 E 525 NWSL 4S 2W 2	59
DAVIS, F. VAL	I	59 4729	APPLCET	19790615	0.01500	S 270 E 133 W4SL 3S 1W14	59
DE LIA, JULIAN E.	IDS	59 5440	FIXDLAP	19940511	0.01500	N 418 W 1650 SESL 3S 2W33	59
DEASON, HENRY H AND MAYE W	IDS	59 4624	APPLCET	19780322	0.01500	S 1910 W 600 N4SL 3S 1W 5	59
DEE'S INCORPORATED	IDS	59 1694	APPLCET	19630322	1.00000	S 530 W 2665 E4SL 3S 1W 5	59
DEGRAW, DAVID L.	I	59 4917	APPLAP	19821109	0.04500	S 235 E 460 W4SL 3S 1W14	59
DICK, JAMES	I	59 2815	UGWC	19020000	0.02200	N 600 E 145 SWSL 2S 1W35	59
DICK, JAMES	I	59 4674	APPLCET	19780919	0.22300	N 606 E 560 SWSL 2S 1W35	59
DIMOND, STANLEY G.	I	59 1352	APPLCET	19580122	2.00000	N 1276 E 168 S4SL 3S 1W 5	59
DIMOND, STANLEY G.	I	59 1671	APPLCET	19620426	1.00000	N 1276 E 168 S4SL 3S 1W 5	59
DIXIE SIX CORPORATION	I	59 2281	UGWCDS	19060000	0.04500	N 187 W 1645 S4SL 3S 1W22	59
DOXEY, SCOTT T.	IDS	59 5185	APPLCET	19860701	0.01500	S 1300 W 730 N4SL 3S 1W 8	59
DUTSON, BERNARD W.	IDS	59 1661	APPLCET	19620305	0.01500	S 635 E 145 W4SL 3S 1W29	59
DUTSON, BERNARD W.	IDS	59 1719	APPLAPD	19640228	0.01500	S 630 E 160 W4SL 3S 1W29	59
DUTSON, LYMAN W.	IDS	59 4717	APPLCET	19790423	0.01500	S 9 E 53 W4SL 3S 1W29	59
EGBERT, KEITH	IDS	59 4229	APPLCET	19760415	0.01500	S 155 E 795 N4SL 3S 1W32	59
EGBERT, SUSAN	I	59 13	APPLWD	19880513	0.00000	N 521 E 14 W4SL 3S 1W16	59
EKINS, RONALD W.	IDS	59 4963	APPLAP	19850619	0.01500	S 80 E 590 W4SL 3S 1W29	59
ELLEFSEN, CLARENCE W. (FAMILY TRUST)	I	59 4433	APPLAPD	19900621	0.01500	S 80 E 590 W4SL 3S 1W29	59
ERICKSEN, KEITH A	IDS	59 3813	APPLCET	19770222	0.03000	N 288 E 47 SWSL 3S 1W11	59
ERICKSON, ERNEST G.	IDS	59 2411	UGWCDS	19210000	0.01500	N 105 W 537 NESL 4S 2W 4	59
ERNEST, ROBERT AND BARBARA	IDS	59 4069	APPLAPD	19740708	0.22200	N 302 W 445 E4SL 3S 1W 5	59
FAIROR, KENNETH L.	IDS	59 4462	APPLCET	19770422	0.01500	N 161 E 1030 S4SL 3S 1W29	59
FARNSWORTH, RONALD DALE	ID	59 4538	APPLCET	19770719	0.01500	S 615 E 1235 N4SL 3S 1W15	59
FERAGEN, LEONARD H.	DS	59 1612	APPLCET	19610605	0.01500	N 2202 E 193 S4SL 3S 1W29	59
FIFE, RICHARD A. AND NORMA D. (JR.)	DS	59 3844	APPLAPD	19720424	0.06700	S 125 E 685 NWSL 3S 1W16	59
FINLAYSON, MAX A.	IDS	59 2414	UGWCDS	19050000	0.009	N 775 E 805 SWSL 2S 1W28	59
FITZGERALD, DENNIS	IDS	59 5374	FIXDAPP	19921015	0.01500	N 345 W 550 SESL 3S 2W33	59
FLETCHER, JOSEPH L. AND CAROLYN F.	IDS	59 4226	APPLCET	19760408	0.01500	N 507 W 180 S4SL 3S 1W29	59
FOOTHILL WATER COMPANY		59 1608	APPLXP	19911217	0.50000	S 758 E 1350 W4SL 3S 2W33	59

FOOTHILL WATER COMPANY	59 1608	APPLEXP	19901109	0.50000 S	758 E	1350 W4SL	3S	2W33	59
FOOTHILLS WATER COMPANY	59 3879	APPLEXP	19920914	0.00000 S	740 E	1330 W4SL	3S	2W33	59
FORMAN, STANFORD M.	59 2681	UGWCDS	19200000	0.22300 S	1458 W	140 NESL	3S	1W16	59
FRAUGHTON, EDWARD J.	59 4250	APPLCERT	19800314	0.16300 N	1600 E	170 W4SL	3S	1W14	59
FRAUGHTON, EDWARD J.	59 5529	APPLAPP	19800314	0.00000 S	1100 E	150 NWSL	3S	1W14	59
FREEMAN, ALONZO	59 1614	APPLAPP	19691121	3.00000 N	75 E	75 SWSL	3S	2W24	59
FULLMER, GENE L. & DELORES H.	59 4364	UGWC	19000000	0.50000 N	1785 E	1578 W4SL	3S	1W11	59
FULLMER, GENE L. & DELORES H.	59 4363	UGWC	19030000	1.00000 N	1755 E	1655 W4SL	3S	1W11	59
FULLMER, LAWRENCE W. & MARY E.	59 4298	DIL	19170000	0.00400 N	230 W	300 SESL	3S	1W 4	59
GAILEY, GRACE E.	59 2283	UGWCDS	18960000	0.01100 N	2282 E	1975 SWSL	3S	1W11	59
GAILEY, SHARON	59 4903	APPLAPP	19860703	0.01500 S	350 W	485 NESL	3S	1W16	59
GARDNER, DAVID I & GAYLE P.	59 1551	APPLCERT	19690229	0.01500 S	921 W	226 N4SL	3S	1W 5	59
GARDNER, DUNCAN R.	59 3076	UGWC	19200000	0.03300 N	1005 W	140 SESL	2S	1W34	59
GARDNER, DUNCAN R.	59 2429	UGWC	19220600	0.00800 N	1005 W	141 SESL	2S	1W34	59
GARDNER, EDWIN F. & JOHN R.	59 3909	UGWC	19340000	2.50000 S	1068 E	60 NWSL	3S	1W 2	59
GARDNER, HOWARD D.	59 388	APPLNPR	19431029	0.01500 S	290 W	145 E4SL	2S	1W34	59
GARDNER, JOHN R. AND EDWIN F.	59 2526	UGWC	18920000	0.00900 N	525 E	300 SWSL	2S	1W35	59
GARDNER, JOHN R. AND EDWIN F.	59 2525	UGWC	19030000	2.00000 N	1600 E	35 SWSL	2S	1W35	59
GARDNER, RALPH	59 4285	DIL	19340000	2.50000 S	1068 E	60 NWSL	3S	1W 2	59
GARDNER, RALPH W.	59 2371	UGWC	19160000	0.02200 N	755 E	1625 SWSL	2S	1W35	59
GASSER, ROBERT	59 3648	APPLCERT	19710226	0.01500 N	279 W	1690 E4SL	3S	1W10	59
GEDGE, NATHAN R. AND GRACE	59 2952	UGWCDS	1900	0.06600 S	1525 W	250 NESL	3S	1W10	59
GIFFORD, JON TROY	59 1091	APPLCERT	19530313	0.08900 S	455 W	212 NESL	3S	1W 3	59
GILBERT, DONALD R. & SUSAN J.	59 1031	APPLCERT	19620619	0.00200 S	3136 W	256 N4SL	3S	1W29	59
GILES, LEE A. AND KATHY	59 5070	APPLAPP	19841114	0.01500 S	250 E	2440 W4SL	3S	1W29	59
GLENMOOR GOLF COURSE INC	59 4189	APPLCERT	19591105	1.39000 S	678 E	316 W4SL	3S	1W 7	59
GLENMOOR GOLF COURSE INC.	59 4483	APPLCERT	19740418	0.83000 S	678 E	316 W4SL	3S	1W 7	59
GLENMOOR GOLF COURSE INC.	59 1521	APPLCERT	19591105	1.11000 S	10 E	254 W4SL	3S	1W 7	59
GLENMOOR GOLF COURSE INC.	59 1521	APPLCERT	19591105	1.11000 S	2222 E	257 NWSL	3S	1W 7	59
GLOVER, GEOFFREY	59 2354	UGWC	19250000	0.02200 S	119 W	339 NESL	3S	1W28	59
GOECKERITZ, RUDOLPH E. & DENISE	59 4027	UGWC	18990000	1.16000 N	400 W	650 S4SL	3S	1W 2	59
GOODRIDGE, JAMES WILLIS	59 3323	UGWC	19060000	0.01100 N	580 E	95 SWSL	2S	1W26	59
GORDON, DAL & REATHA	59 5085	APPLAPP	19970616	0.00000 N	255 W	160 SESL	3S	2W33	59
GORDON, DAL & REATHA	59 5364	FIXDLAP	19850306	0.00000 N	345 W	550 SESL	3S	2W33	59
GORDON, SCOTT	59 3986	APPLAPP	19920825	0.00000 N	30 W	400 SESL	3S	2W33	59
GRAHAM, SHIRLENE	59 2147	UGWC	19780128	0.01500 N	1500 E	1150 SWSL	3S	1W20	59
GREENWOOD, MARK H.	59 2604	UGWC	18960000	0.02200 N	865 W	315 E4SL	2S	1W34	59
GREENWOOD, MARK H.	59 328	APPLCERT	19510124	0.25000 N	500 W	500 E4SL	2S	1W34	59
GUSS, ABE	59 4537	APPLCERT	19510124	0.12600 N	450 E	396 S4SL	2S	1W27	59
GYGI, WALLACE NEIL	59 4390	APPLCERT	19770719	0.02200 N	1183 E	204 SWSL	3S	1W11	59
HADLEY, MARIE	59 4323	APPLCERT	19800818	0.01500 N	646 W	771 SESL	3S	1W 9	59
HAL K. LARSEN AND SONS CONSTRUCTION INC.	59 3814	APPLCERT	19761004	0.01500 S	180 W	967 N4SL	3S	1W32	59
HALL, JACK W.	59 4143	APPLAPP	19710712	0.01500 N	200 W	766 NESL	4S	2W 4	59
HAM, BILLY W. AND GRACE	59 5582	APPLCERT	19750521	0.01500 S	230 E	355 N4SL	3S	1W20	59
HAMILTON PROPERTIES L.C., LOWELL W.	59 5582	APPLAPP	19980617	0.00000 S	400 W	300 NESL	4S	2W 3	59
HAMILTON PROPERTIES L.C., LOWELL W.	59 2720	APPLAPP	19980617	0.00000 S	400 W	1320 NESL	4S	2W 3	59
HAMILTON, LOWELL AND MARY L.	59 2720	APPLAPP	19980617	0.00000 S	400 W	300 NESL	4S	2W 3	59
HAMILTON, LOWELL AND MARY L.	59 2720	UGWC	19170000	0.07000 S	597 W	1350 NESL	4S	2W 3	59
HAMILTON, RALPH	59 5204	APPLCERT	19860820	0.01500 S	335 E	105 NWSL	4S	2W 2	59
HANCOCK, FORREST	59 995	APPLNPR	19511108	0.01500 S	1235 E	1185 N4SL	3S	1W14	59
HANSEN, CHARLES G.	59 4894	APPLAPP	19820601	0.01500 S	920 W	1060 NESL	3S	1W27	59
HANSEN, GREG	59 4869	APPLAPP	19811230	0.01500 S	1150 E	1220 N4SL	3S	1W 3	59
HANSEN, GREGORY L.	59 4942	APPLAPP	19830504	0.01500 N	400 E	600 W4SL	3S	1W 2	59
HANSEN, KEVIN	59 5096	APPLCERT	19890525	0.04000 N	65 W	777 SESL	3S	1W 9	59
HANSEN, KEVIN & CAROL	59 4684	APPLCERT	19781205	0.01500 N	65 W	777 SESL	3S	1W 9	59
HANSEN, PAUL L. AND ROXANNE S.	59 3885	APPLCERT	19721031	0.01500 N	70 W	875 SESL	3S	2W33	59

HANSEN, PAUL LEROY	IDS	59 4946	APPLAPD	19830525	0.01500 N 100 W 1100 SE SL 3S 2W33	59
HARDMAN, DAVID NORD	ID	59 4005	APPLAPD	19761116	0.01500 N 329 W 220 S4SL 3S 1W20	59
HARMAN, MAURICE M.	IDS	59 1693	APPLUNAP	19630315	4.00000 S 50 E 10 W4SL 3S 1W22	59
HARMAN, MAURICE M. (ETAL)	IDS	59 1626	APPLUNAP	19690831	0.00000 N 60 W 1260 S4SL 3S 1W 9	59
HARPER, FRANCIS M.	IDS	59 4414	APPLCERT	19770215	0.01500 N 1893 E 642 S4SL 3S 1W29	59
HATT, THIEL F.	I	59 5105	APPLAPD	19850604	0.02200 S 432 W 420 N4SL 3S 1W14	59
HAUN, ARCH L. & EVA F.	S	59 245	APPLNPR	19410529	0.01500 S 332 W 168 N4SL 3S 1W 4	59
HAUN, ARCH L. AND EVA F.	IDS	59 2170	UGWCDS	19200000	0.02600 S 432 W 168 N4SL 3S 1W 4	59
HAYMORE, BRUCE	IDS	59 5464	UGWC	19320000	0.00000 S 166 W 78 E4SL 3S 1W21	59
HERRIMAN IRRIGAITON CO.	I	59 17	APPLAPD	19550211	4.59000 N 1711 W 1316 SE SL 3S 2W34	59
HERRIMAN PIPELINE & DEVELOPMENT CO. (HELD BY BWR)	IDS O	59 16	APPLCERT	19550211	0.41000 N 1711 W 1316 SE SL 3S 2W34	59
HERRIMAN PIPELINE & DEVELOPMENT CO. (HELD BY BWR)	IDS	59 1212	APPLCERT	19550305	0.98300 N 2020 W 100 SE SL 3S 2W34	59
HERRIMAN PIPELINE AND DEVELOPMENT COMPANY	IDS	59 5258	APPLAPP	19940217	1.00000 N 2020 W 100 SE SL 3S 2W34	59
HERRIMAN PIPELINE AND DEVELOPMENT COMPANY	IDS	59 5258	APPLAPP	19940217	1.00000 N 1711 W 1316 SE SL 3S 2W34	59
HEUGHS CREEK ASSOCIATES LLC	IDS	59 2416	UGWC	19300000	0.05600 S 324 E 235 N4SL 3S 1W32	59
HILBERT, DEMA & GARY	IDS	59 4964	APPLAPD	19830810	0.01500 S 120 E 1170 W4SL 3S 1W29	59
HILL, ALLEN F.	IDS	59 4858	APPLAPD	19811102	0.03000 N 805 E 1239 W4SL 3S 1W14	59
HOGGE, J. NORMAN	IDS	59 3950	APPLCERT	19730508	0.01500 N 493 E 1513 SWSL 3S 1W20	59
HOLBROOK, VENILE	IDS	59 4873	APPLCERT	19820219	0.01500 S 1690 W 460 NE SL 3S 1W28	59
HOLMAN, BOBBY JOE	IDS	59 5084	APPLAPD	19850306	0.01500 N 343 W 551 SE SL 3S 2W33	59
HOLT, ALMA M.	IDS	59 1987	UGWCDS	1902	0.01100 S 1420 W 170 NE SL 3S 1W15	59
HOLT, MARIE	IDS	59 2007	UGWCDS	19100000	0.01100 S 1820 W 200 N4SL 3S 1W15	59
HOOGVELDT, MARTIN M.	IDS	59 5140	APPLAPD	19850911	0.01500 N 2460 E 60 S4SL 3S 1W29	59
HOPES, ROBERT	IDS	59 3600	APPLCERT	19690611	0.04500 S 880 E 552 NW SL 3S 1W 4	59
HOWELL, KEVAN	IDS	59 4148	APPLCERT	19750616	0.01500 S 332 W 669 N4SL 3S 1W30	59
HUG, JON J.	I	59 3452	APPLAPD	19680418	0.01500 S 660 E 165 W4SL 3S 1W29	59
HUNTSMAN, COURTNEY C. AND PATRICIA H.	I	59 3925	APPLCERT	19730514	0.10000 N 636 E 39 S4SL 2S 1W34	59
HYMAS, CHAD	ID	59 5525	APPLAPP	19961210	0.00000 N 764 W 80 SE SL 3S 2W33	59
HYMAS, CHAD	I	59 4898	APPLAPD	19820625	0.00000 N 764 W 80 SE SL 3S 2W33	59
IVERSON, LE GRAND	IDS	59 3826	APPLCERT	19711103	0.045 N 1330 E 1040 S4SL 2S 1W28	59
IVIE, JIM D. & WANDA	IDS	59 4925	APPLAPP	19830210	0.01500 N 263 E 1425 S4SL 3S 2W33	59
IVIE, JIM DEE	IDS	59 4924	APPLAPP	19830210	0.01500 N 300 W 900 SE SL 3S 2W33	59
IVIE, JIM DEE	IDS	59 4544	APPLAPP	19990713	0.01500 N 263 E 1425 S4SL 3S 2W33	59
IWAMOTO, TAKEO	IDS	59 2552	UGWCDS	19000000	0.02200 S 110 W 460 N4SL 3S 1W10	59
IWAMOTO, TAKEO	ID O	59 4536	APPLCERT	19770719	0.02200 S 100 W 186 N4SL 3S 1W10	59
IWAMOTO, TAKEO	ID O	59 4536	APPLCERT	19770719	0.01500 S 110 W 460 N4SL 3S 1W10	59
IWAMOTO, TAKEO	I O	59 4544	APPLWD	19350000	0.02200 S 50 W 125 N4SL 3S 1W10	59
IWAMOTO, TAKEO	I	59 2631	UGWCDS	19950731	0.02200 S 110 W 460 N4SL 3S 1W10	59
J. N. HUTCHINGS & SONS INCORPORATED	IDS	59 2607	UGWCDS	19210600	0.06700 S 480 E 152 N4SL 3S 1W 9	59
JENSEN AND WILKINSON INCORPORATED	I	59 4948	UGWC	18990000	0.02200 S 5050 W 280 NE SL 3S 1W15	59
JENSEN, DONALD D. & JANE R.	IDS	59 1993	APPLCERT	19830527	0.02000 S 26 W 1124 NE SL 3S 1W16	59
JENSEN, MRS. GEORGE M.	I	59 2246	UGWCDS	1924	0.02200 S 26 W 1124 NE SL 3S 1W16	59
JENSEN, VERNON B. AND FERN L.	I	59 4355	UGWCDS	19240000	0.00400 S 1403 W 4740 NE SL 3S 1W15	59
JEPPSEN, BRUCE	I	59 4254	DIL	1903	4.00000 N 1755 E 1655 W4SL 3S 1W11	59
JEPPSEN, BRUCE	I	59 4254	DIL	1903	0.40000 N 595 E 460 W4SL 3S 1W11	59
JESSEE, NORMAN	I	59 4476	APPLCERT	19770509	0.01500 S 164 W 312 NE SL 3S 1W22	59
JESSEE, NORMAN P.	I	59 4459	APPLCERT	19770418	0.01400 N 204 W 420 SE SL 3S 1W17	59
JESSEE, NORMAN P.	IDS	59 3597	APPLCERT	19690527	0.01500 N 204 W 420 SE SL 3S 1W17	59
JOHNSON, CHESTER L.	IDS	59 4032	APPLAPD	19740402	0.01500 N 278 E 786 SW SL 3S 1W20	59
JOHNSON, RANDY	IDS	59 4031	APPLAPD	19740402	0.01500 N 278 E 786 SW SL 3S 1W20	59
JONES BROTHERS	IDS	59 1665	APPLAPD	19620327	10.00000 N 100 SWSL 3S 2W10	59
JONES, HAL H.	ID	59 5296	APPLAPP	19900717	0.01500 S 350 W 485 NE SL 3S 1W16	59
JONES, JOAN E.	IDS	59 4596	APPLAPD	19850709	0.07800 S 100 E 180 NW SL 3S 1W16	59
JONES, MERLIN H.	DS	59 2842	UGWC	19000000	0.02200 S 180 E 105 W4SL 3S 1W 3	59
JONES, OTTO F.	IS	59 4768	APPLCERT	19800318	0.14000 N 531 E 14 W4SL 3S 1W16	59
JONES, OTTO F.	IS	59 4326	APPLCERT	19761019	0.06000 N 521 E 14 W4SL 3S 1W16	59
JORDAN VALLEY WATER CONSERVANCY DISTRICT	IS	59 1536	APPLAPP	19960612	5.00000 S 840 W 250 E4SL 3S 2W26	59

MACKAY, KEITH P.	59 4260	APPLIAPD	19760722	0.01500 N 870 E 420 S4SL 3S 2W33	59
MADSEN, ORVILLE	59 5054	APPLIAPD	19840702	0.01500 S 100 W 1000 NESL 3S 1W32	59
MADSEN, WAYNE AND MARION	59 2274	UGWC	19110000	0.056 N 150 E 690 S4SL 2S 1W28	59
MAKRIS, GEORGE	59 2263	UGWC	18860000	0.02200 N 810 W 730 SESL 2S 1W27	59
MARSHALL, EARL F.	59 2410	UGWCLAPD	19310000	0.11100 S 1702 W 155 N4SL 3S 1W 4	59
MARTIN, MARK K.	59 4304	APPLCERT	19760723	0.01500 N 325 W 130 S4SL 3S 1W29	59
MASCAPO, BOB	59 5068	APPLUNAP	19841016	0.20000 S 820 E 800 NWSL 3S 1W 8	59
MAURER, JACKSON S.	59 666	APPLNPR	19480830	0.01500 N 625 W 110 S4SL 3S 1W11	59
MAXFIELD, E. O. & ROSAMOND P.	59 2100	UGWCDCIS	18930000	0.02200 S 2798 W 218 N4SL 3S 1W27	59
MAYNARD, THEODORE	59 2877	UGWCDCIS	193007	0.00700 S 1879 W 5167 NESL 3S 1W15	59
MCALLISTER, LYLE D.	59 4941	APPLIAPD	19830330	0.04000 S 750 W 850 N4SL 3S 1W16	59
MCCALLISTER, LYLE D.	59 4941	APPLIAPD	19830330	0.04000 S 200 W 850 N4SL 3S 1W16	59
MCCARTHY, CURTIS L. & CHARICE	59 3399	APPLCERT	19620918	0.01500 S 100 E 2430 W4SL 3S 1W29	59
MCDONALD, JULIUS M. AND IRENE S.	59 3214	UGWC	19100000	0.01100 N 205 E 438 S4SL 2S 1W27	59
MCDUGAL, DANIEL W.	59 2239	UGWC	18960000	0.02200 N 2730 E 800 SWSL 2S 1W26	59
MCDUGAL, EDMUND L.	59 2398	UGWCDCIS	18840000	0.06700 S 1075 E 2179 NWSL 3S 1W 2	59
MCGRATH, JERRY L. & PEGGY Z.	59 5473	UGWC	1934	0.00000 S 1255 W 325 N4SL 3S 1W26	59
MCKEE, CLIFTON A.	59 2320	UGWC	19160000	0.00100 S 3955 W 130 N4SL 3S 1W16	59
MCMULLIN, CLELL V.	59 2269	UGWC	19311100	0.06700 N 2620 W 130 S4SL 3S 1W16	59
MCMULLIN, URBAN B. & VERDA H.	59 3080	UGWC	19000000	0.03300 S 1968 W 264 NESL 3S 1W15	59
MCQUEEN, NELSON L.	59 4940	APPLCERT	19830426	0.01500 S 335 W 1255 N4SL 3S 1W28	59
MECHAM, LAVERL (GENERAL PERSONAL REPRESENTATIVE)	59 405	APPLNPR	19440518	0.01500 N 116 E 672 W4SL 3S 1W 2	59
MECHAM, LOUIS F.	59 5246	APPLIAPD	19871103	0.01500 S 240 E 750 NWSL 4S 2W 3	59
MIELKE, DWIGHT	59 3948	APPLIAPD	19730508	0.01500 N 1315 E 130 S4SL 3S 1W20	59
MITCHELL, ARTHUR O. AND LEVARA	59 5233	APPLCERT	19870803	0.01300 N 1720 W 217 SESL 3S 2W34	59
MITCHELL, MARCUS	59 1869	UGWCDCIS	1904	0.00200 S 1589 E 2820 NWSL 3S 1W14	59
MONTOYA, ALEX AND MARY L.	59 526	APPLDIS	19461126	0.01500 N 1025 E 195 S4SL 3S 2W33	59
MOOSMAN, GLEN	59 4404	APPLCERT	19770127	0.10000 N 1048 W 143 E4SL 3S 1W 4	59
MOOSMAN, GLEN	59 4953	APPLIAPD	19900608	0.04500 N 1050 W 2500 E4SL 3S 1W 4	59
MURPHY, GUS	59 3746	UGWCLIT	19320000	0.02200 S 166 W 78 E4SL 3S 1W21	59
N L. K. FAMILY TRUST	59 5387	UGWC	19000000	0.03300 S 1075 W 150 N4SL 3S 1W29	59
NAYLOR, BETTY G.	59 4747	UGWC	19030000	0.10000 N 825 E 500 SWSL 2S 1W35	59
NAYLOR, DEAN	59 2033	UGWCDCIS	19111115	0.01500 S 2241 E 146 NWSL 3S 1W14	59
NAYLOR, HENRY W.	59 3997	APPLIAPD	19731030	0.01500 N 1000 W 520 S4SL 2S 1W33	59
NAYLOR, LARRY C.	59 3982	APPLCERT	19730802	0.01500 N 230 W 1190 S4SL 3S 1W20	59
NAYLOR, ROBERT A. AND BERTHA	59 2288	UGWC	19020000	0.03300 S 2470 W 245 NESL 3S 1W10	59
NEFF, NELDON J. AND ELAINE	59 2290	UGWC	19200000	0.05600 S 65 W 143 N4SL 3S 1W28	59
NELSON, CHARLES R. AND ELLEN E.	59 2972	UGWC	19200000	0.04500 N 944 W 200 E4SL 3S 1W 3	59
NELSON, HENRY	59 2293	UGWCDCIS	19030000	0.06700 S 787 E 654 NWSL 3S 1W14	59
NEWSOME, RICHARD C. & RUTH H.	59 1940	UGWC	18960000	0.00400 N 1310 E 2412 SWSL 3S 1W11	59
NEWTON, WILLIAM D. AND LAVELL E.	59 2409	UGWCLAPD	19240800	0.01100 N 190 E 1012 SWSL 3S 1W28	59
NIELSEN, HENRY D.	59 3012	UGWCDCIS	19100000	0.04500 S 4158 W 2879 NESL 3S 1W15	59
NIELSEN, LARRY M.	59 4451	APPLIAPD	19770324	0.06700 N 810 W 300 SESL 3S 1W 8	59
NIELSEN, T. JOHN (II)	59 4742	APPLCERT	19790801	0.01500 S 1014 W 1937 E4SL 3S 1W21	59
NIELSEN, THOMAS J.	59 4741	APPLCERT	19790801	0.01500 S 1014 W 1937 E4SL 3S 1W21	59
NOGALES, RITO AND URVANA	59 2264	UGWC	19110000	0.04500 N 115 W 972 SESL 2S 1W27	59
NORTH JORDAN IRRIGATION COMPANY	59 2460	UGWC	19290000	5.00000 N 2070 E 580 SWSL 2S 1W26	59
NORTH JORDAN IRRIGATION COMPANY	59 2453	UGWC	19290000	3.00000 N 810 W 730 SESL 2S 1W27	59
NORTH JORDAN IRRIGATION COMPANY	59 2457	UGWC	19290000	3.50000 N 1580 E 530 SWSL 2S 1W26	59
NUZMAN, LESTER J.	59 4842	APPLCERT	19810824	0.07000 N 404 E 165 SWSL 3S 1W 2	59
OAKESON, GLEN W. & MOANA C.	59 3871	APPLCERT	19720823	0.01500 N 723 W 214 S4SL 3S 1W29	59
OLSEN, CECIL A.	59 4471	APPLCERT	19770503	0.01500 N 1541 E 489 S4SL 3S 1W29	59
OLSEN, JOHN H.	59 641	APPLNPR	19480614	0.01500 S 1043 E 140 NWSL 3S 1W 2	59
OLSEN, JOHN H.	59 3336	DIL	19340000	0.06700 S 1068 E 60 NWSL 3S 1W 2	59
OPP, BARBARA K.	59 4622	APPLIAPD	19780313	0.05600 N 200 E 1040 S4SL 3S 1W17	59
ORME, GILBERT	59 5000	APPLIAPD	19840507	0.01500 N 1050 E 1500 SWSL 3S 1W22	59
ORTEGA, JOSEPH A. AND ZELMA M.	59 2967	UGWC	19250000	0.11100 S 330 E 1422 NWSL 2S 1W35	59

OWEN, LAVAWN R.	I	59 4107	APPLPAD	19781204	2.00000	N	100 W	1200 SESL	3S	1W 8	59
PANDO, JACOB	I	59 2686	UGWC	19080000	0.02700	N	540 W	160 SESL	2S	1W33	59
PARRY, BLAINE B.		59 1744	APPLPAD	19650316	0.01500	S	150 W	1420 N4SL	3S	1W29	59
PASCOE, ERWIN L. JR. AND BEATRICE	IDS	59 2683	UGWC	19240701	0.00200	S	1192 E	186 N4SL	3S	1W29	59
PATTERSON, REX	ID	59 3053	UGWC	19040000	0.02200	S	80 W	630 NESL	2S	1W34	59
PEASE, CECIL AND WILMA	IDS	59 4127	APPLCERT	19750325	0.01500	N	1435 E	1190 W4SL	3S	1W14	59
PEASE, JANICE	IDS	59 4912	APPLPAD	19821007	0.04500	S	1120 E	870 NWSL	3S	1W14	59
PEINE, FRED	IDS	59 5228	APPLUNAP	19870529	0.05000	S	800 E	855 NWSL	3S	1W 4	59
PEINE, FRED	I S	59 3621	APPLPAD	19700603	0.01500	S	800 E	855 NWSL	3S	1W 4	59
PERSCHON, A. ROBERT	IDS	59 4346	APPLCERT	19770103	0.02200	N	503 E	2361 W4SL	3S	1W10	59
PETERS, FRANK	IDS	59 3977	APPLPAD	19730702	0.01500	N	1785 E	1180 SWSL	3S	1W20	59
PETERSEN, CRAIG	IDS	59 4325	APPLCERT	19761014	0.01500	S	635 E	177 NWSL	3S	1W29	59
PETERSEN, ROY C.	D	59 3263	UGWC	19310000	0.01500	S	1437 W	165 N4SL	3S	1W29	59
PETERSEN, ROY C.		59 2844	UGWC	1927	0.02200	S	1420 W	158 N4SL	3S	1W29	59
PETERSON BROS.	IDS	59 3397	APPLUNAP	19660713	2.00000	S	1300 E	20 NWSL	3S	1W16	59
PETERSON, DONALD L. AND F. MILES		59 654	APPLDIS	19480722	0.01500	S	119 W	168 N4SL	3S	1W16	59
PETERSON, MRS. CLYDE	DS	59 3051	UGWC	19340000	0.04500	S	2536 W	280 NESL	3S	1W20	59
PETERSON, RODNEY K.	IDS	59 2298	UGWC	19140000	0.01100	S	1296 E	107 NWSL	3S	1W29	59
PETERSON, ROY G. AND BEVERLY L.	I S	59 2099	UGWC	18950000	0.00900	S	412 W	55 NESL	3S	1W10	59
PETTEGREW, DONALD E. AND MERLE J. WARDLE	IDS	57 8537	APPLPAD	19800624	0.01500	N	410 W	1720 E4SL	3S	1W27	57
PHELPS, ORVAL K. & FLORENCE J.	ID	59 581	APPLNPR	19470729	0.01500	N	230 E	90 W4SL	3S	1W15	59
PHELPS, STEVEN D. & VICKI LIN	IDS	59 4055	APPLCERT	19740530	0.01500	S	1235 W	156 N4SL	3S	1W29	59
PHELPS, WILFORD E. & ISABELL	IDS	59 3769	UGWC	19300000	0.02200	S	987 W	150 N4SL	3S	1W29	59
PONT, DONALD E.	I	59 5052	APPLCERT	19840622	0.01000	N	1084 E	186 SWSL	3S	1W14	59
POTOMAC CORPORATION	ID O	59 4436	APPLCERT	19770301	0.22000	S	180 W	664 NESL	2S	1W34	59
POWELL, KEITH L. AND MELVA J.	IDS	59 2034	UGWC	19290000	0.00400	S	1155 E	115 N4SL	3S	1W16	59
PRICE, JOHN L.	IDS	59 4813	APPLPAD	19850520	0.13300	S	1260 E	200 N4SL	3S	1W 4	59
PULLEY, HARVEY	I	59 5311	APPLPAD	19760719	0.05700	N	200 W	1100 E4SL	3S	1W 5	59
PULLEY, HARVEY	IDS	59 4259	APPLCERT	19760719	0.04300	N	251 W	1127 E4SL	3S	1W 5	59
PUZEY, NAD	IDS	59 4786	APPLPAD	19860812	0.01500	S	700 E	2200 NWSL	3S	1W26	59
QUILTER, JAMES O. & VIRGINIA A.	ID	59 1263	APPLNPR	19560521	0.01500	N	1687 W	200 S4SL	3S	1W28	59
QUILTER, JAMES O. AND VIRGINIA R.	DS	59 2846	UGWC	19160000	0.02700	N	445 W	620 S4SL	2S	1W35	59
RADMALL, GLEN	IDS	59 638	APPLDIS	19480604	0.01500	S	49 E	75 NWSL	3S	1W 2	59
RASMUSSEN, BRENT K.	I	59 4338	APPLCERT	19761123	0.01500	N	394 W	1980 E4SL	3S	1W27	59
RASMUSSEN, CLYDE & ILA R.	IDS	59 4286	DIL	19340000	2.50000	S	1068 E	60 NWSL	3S	1W 2	59
RASMUSSEN, CLYDE AND ILA R.	IDS	59 2361	UGWC	19030000	0.00400	S	520 E	1000 NWSL	3S	1W 2	59
RASMUSSEN, KENNETH P. & ELSIE S.	IDS	59 4771	APPLCERT	19801008	0.01500	N	327 W	223 S4SL	3S	1W20	59
RASMUSSEN, TRAVIS & BEA	IDS	59 3817	APPLCERT	19710803	0.01500	N	965 W	202 S4SL	3S	1W20	59
REID, JOHN A AND NOLA M.	ID	59 2292	UGWC	19030000	0.04500	N	1906 E	150 SWSL	3S	1W11	59
REID, JOHN A.	I S	59 4417	APPLCERT	19770216	0.20500	S	1137 E	163 W4SL	3S	1W11	59
RICE, KENNETH F. (JR.)	IDS	59 4079	APPLCERT	19740815	0.01500	N	292 E	760 SWSL	3S	1W20	59
RICE, KENNETH F. (JR.) & DIANA M.	IDS	59 4330	APPLPAD	19840504	0.01500	N	300 E	720 SWSL	3S	1W20	59
RICHARDS, STUART H.	D	59 2862	UGWC	19090000	0.00600	S	1029 W	208 N4SL	3S	1W 3	59
RICHARDSON, DUANE G.	IDS	59 4753	APPLCERT	19791023	0.01500	S	825 E	155 N4SL	3S	1W 2	59
RICHARDSON, DUANE G. (TRUSTEE, RICHARDSON FAMILY T.)	DS	59 3005	UGWC	19080000	0.00700	S	760 E	140 N4SL	3S	1W 2	59
RICHINS, MARY ANN	IDS	59 3464	UGWC	18960000	0.02200	N	865 W	315 E4SL	2S	1W34	59
RIVERTON (CITY OF)	C	59 1554	APPLAPP	19960412	1.50000	S	320 W	122 NESL	3S	1W31	59
RIVERTON CITY	C	59 1533	APPLAPP	19950103	5.00000	N	113 W	786 NESL	3S	1W32	59
RIVERTON CITY CORPORATION	C	59 1118	APPLUNAP	19620623	2.00000	S	320 W	122 NESL	3S	1W31	59
RIVERTON CITY CORPORATION	C	59 1534	APPLCERT	19590804	5.00000	S	320 W	122 NESL	3S	1W31	59
RIVERTON CITY CORPORATION	C	59 1189	APPLCERT	19540913	2.46000	S	320 W	122 NESL	3S	1W31	59
ROBBINS, GOLDEN W.	I S	59 1770	DIL	18730000	0.50000	N	1620 W	250 S4SL	3S	1W14	59
ROBERTS, FRANK C. AND JACQUELINE	I S	59 3926	APPLCERT	19730514	0.10000	N	636 E	39 S4SL	2S	1W34	59
ROBERTS, G. ELDON		59 1930	UGWC	1906	0.056	S	1280 W	140 N4SL	2S	1W28	59
ROBERTSON, DOUGLAS AND BETH	IDS	59 4091	APPLPAD	19741007	0.01500	S	1262 W	190 N4SL	3S	1W29	59
ROWE, GLENN N. & MELODY A.	I	59 5001	APPLCERT	19840507	0.01500	S	340 W	1226 NESL	3S	1W16	59
RUSHTON, CLINTON V. & JOAN R.	I	59 4908	APPLCERT	19820902	0.01500	S	205 E	218 W4SL	3S	1W14	59

RUSHTON, DONALD	ID	O	59 3417	APPLUNAP	19670112	3.00000	N 800 E 200 SWSL 3S 1W17	59
RUSSELL, CARL			59 1277	APPLDIS	19560717	0.01500	S 715 W 161 N4SL 3S 1W 4	59
RUSSELL, CARL			59 1307	APPLDIS	19570328	0.01500	S 690 W 70 N4SL 3S 1W 4	59
SALT LAKE COUNTY	I		59 5425	APPLAPP	19940302	2.00000	S 1195 W 1280 NESL 3S 1W 4	59
SALT LAKE COUNTY	I		59 5179	APPLAPP	19920415	2.00000	S 970 W 1265 NESL 3S 1W 4	59
SALT LAKE COUNTY	I		59 5179	APPLAPP	19860611	2.00000	S 970 W 1265 NESL 3S 1W 4	59
SALT LAKE COUNTY		O	59 2368	UGWC	19960000	0.02700	N 2 E 750 S4SL 2S 1W33	59
SALT LAKE COUNTY	I		59 5425	APPLAPP	19940302	2.00000	S 970 W 1265 NESL 3S 1W 4	59
SALT LAKE COUNTY			59 1972	UGWCDIS	1909	0.00900	N 320 E 1100 S4SL 2S 1W33	59
SALT LAKE COUNTY RECREATION DEPARTMENT			59 3090	UGWCDIS	19900000	0.03300	S 429 W 820 NESL 3S 1W 4	59
SALT LAKE COUNTY, REAL ESTATE DIVISION, FINANCE DEPT.			59 2816	UGWCDIS	1907	0.01100	N 800 E 132 W4SL 3S 1W22	59
SAVAGE, EARL & CHRISTINE	IDS		59 4935	APPLAPPD	19830331	0.01500	S 240 E 420 NWSL 4S 2W 2	59
SCHMIDT TRUST, HENRY F.	I		59 5312	APPLREJ	19890621	0.14900	N 2640 W 1100 S4SL 3S 1W 3	59
SCHMIDT, DARLENE (C/O MABLE JENKINS)	IDS		59 4833	APPLAPPD	19810728	0.03000	S 800 E 960 W4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 4258	APPLAPP	19921217	0.25000	N 2640 W 1100 S4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 4258	APPLAPP	19921217	0.25000	N 870 W 455 S4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 5126	APPLAPP	19850626	0.75000	N 2640 W 1100 S4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 4258	APPLAPP	19921217	0.25000	N 875 W 470 S4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 4258	APPLAPP	19921217	0.25000	N 865 W 455 S4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 4258	APPLAPP	19921217	0.25000	N 875 W 460 S4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 3811	APPLAPPD	19710625	0.50000	N 1300 W 1000 S4SL 3S 1W 3	59
SCHMIDT, HENRY F.	I		59 4258	APPLAPP	19921217	0.25000	N 865 W 460 S4SL 3S 1W 3	59
SCHMIDT, HENRY F. (TRUST)			59 4258	APPLAPP	19921217	0.25000	N 865 W 455 S4SL 3S 1W 3	59
SCHMIDT, HENRY F. (TRUST)			59 4258	APPLAPP	19921217	0.25000	N 875 W 460 S4SL 3S 1W 3	59
SCHMIDT, HENRY F. (TRUST)			59 4258	APPLAPP	19921217	0.25000	N 865 W 460 S4SL 3S 1W 3	59
SCHMIDT, HENRY F. (TRUST)			59 4258	APPLAPP	19921217	0.25000	N 870 W 455 S4SL 3S 1W 3	59
SCHMIDT, HENRY F. (TRUST)			59 4258	APPLAPP	19921217	0.25000	N 875 W 470 S4SL 3S 1W 3	59
SCHMIDT, JOSEPH J.	I		59 1198	APPLCERT	19541108	5.00000	N 110 E 41 W4SL 3S 1W 9	59
SCHMIDT, JOSEPH J.	I		59 1613	APPLCERT	19610605	1.07000	N 110 E 41 W4SL 3S 1W 9	59
SCHMIDT, PAUL D.	ID		59 2553	UGWC	19040000	0.01800	N 1120 W 156 S4SL 3S 1W 3	59
SCHMIDT, PAUL D.	IDS		59 2136	UGWC	19000000	0.20000	N 1768 W 170 S4SL 3S 1W 3	59
SCHORR, WILLIAM H.	I S		59 2724	UGWC	19291000	0.011	S 75 W 220 E4SL 2S 1W29	59
SCHOUEDEL, JAMES E. AND SANDRA	IDS		59 5089	APPLAPPD	19850326	0.01500	N 343 W 551 SESL 3S 2W33	59
SCHOUTEN, LARRY J.	ID		59 4901	APPLCERT	19820728	0.01500	N 765 E 2482 W4SL 3S 1W29	59
SCHOUTEN, SHERRILL J.	IDS		59 3869	APPLCERT	19720811	0.01500	S 340 E 790 NWSL 3S 1W29	59
SCIUTO, STEVEN	IDS		59 4244	APPLCERT	19760622	0.01500	N 1809 E 1021 S4SL 3S 1W29	59
SEAL, EMMA V.	IDS		59 764	APPLNPR	19490922	0.01500	S 1000 E 105 N4SL 3S 1W32	59
SEEGRIST, ROGER	D		59 4788	APPLAPPD	19810122	0.01500	N 920 E 790 W4SL 3S 1W11	59
SHARP, YOUNG			59 2687	UGWCDIS	19290000	0.00000	S 860 E 220 N4SL 3S 1W 3	59
SHULSEN, ERMA T.			59 1592	APPLDIS	19610327	0.10000	N 747 W 220 S4SL 2S 1W34	59
SHULSEN, LARKEN H.	I S		59 2343	UGWC	19080000	0.01100	S 425 E 200 N4SL 2S 1W34	59
SIMMONS, KENNETH M. & ONEITA P.			59 3122	UGWCDIS	19300000	0.01100	S 2543 W 648 NESL 3S 1W20	59
SIMPSON, ROBERT L.	IDS		59 3816	APPLCERT	19710727	0.01500	N 343 W 551 SESL 3S 2W33	59
SMITH, ALVIN R. AND SANDRA H.			59 3902	APPLAPPD	19791101	0.01500	N 2200 E 1400 SWSL 3S 1W20	59
SMITH, CLINTON E. AND ALMEDA H.			59 2713	UGWCDIS	1900	0.500	S 835 W 580 NWSL 2S 1W28	59
SMITH, F. E.	IDS		59 2037	UGWC	19080000	0.02200	N 1600 W 575 S4SL 3S 1W22	59
SMITH, JOHN W.	IDS		59 569	APPLNPR	19470515	0.01500	N 600 E 90 W4SL 3S 1W 2	59
SOFFE, VAUGHN C.	ID		59 2396	UGWC	19080000	0.04500	S 2211 E 2879 NWSL 3S 1W14	59
SORENSEN, RUSSELL	IDS		59 4982	APPLCERT	19840206	0.01500	S 1005 E 1860 NWSL 3S 1W26	59
SOUTH JORDAN CITY	C		59 5170	APPLUNAP	19860411	3.00000	N 200 W 2400 SESL 3S 2W23	59
SOUTH JORDAN CITY	C		59 5171	APPLUNAP	19860411	3.00000	N 200 E 2800 SWSL 3S 2W24	59
SOUTH JORDAN CITY	C		59 5169	APPLUNAP	19860411	3.00000	S 200 E 200 NWSL 3S 1W10	59
SOUTH JORDAN, CITY OF	C		59 5152	APPLUNAP	19851210	3.50000	S 400 W 50 E4SL 3S 1W10	59
SOUTH JORDAN, CITY OF	C		59 5152	APPLUNAP	19851210	3.50000	N 1540 W 640 SESL 3S 1W10	59
SOUTH JORDAN, CITY OF	C		59 5152	APPLUNAP	19851210	3.50000	N 1540 E 920 S4SL 3S 1W10	59
SOUTH JORDAN, TOWN OF	I		59 1001	APPLCERT	19540608	0.50000	N 320 E 666 W4SL 3S 1W14	59
SOUTH VALLEY WATER RECLAMATION FACILITY	O		59 5108	APPLCERT	19850614	0.01500	N 100 W 2100 SESL 3S 2W21	59

SOUTH VALLEY WATER RECLAMATION FACILITY			APPLWDD	19840309	0.00000	N 1840 W 166 E4SL 3S 2W21	59
SOUTHERN PACIFIC TRANSPORTATION COMPANY	I	O	UGWCDS	19090000	0.06700	S 3404 E 422 N4SL 3S 1W 6	59
SOUTHERN PACIFIC TRANSPORTATION COMPANY	IDS		UGWCDS	19090000	0.06700	S 3445 E 448 N4SL 3S 1W 6	59
SOUTHWIRE COMPANY	ID		APPLAPD	19810721	1.00000	S 720 W 674 NESL 3S 1W 5	59
SPIERS, LORAIN T. AND GARTH	DS		UGWC	19850619	0.01500	S 80 E 855 W4SL 3S 1W29	59
SPOERRI, AUGUST F.	I		APPLCERT	19900821	0.01500	N 810 W 300 SESL 3S 1W 8	59
SPRATLING, JOHN	IDS		APPLCERT	19610822	0.02700	S 1628 W 120 NESL 3S 1W 9	59
SPRATLING, JOHN	IDS		APPLCERT	19610822	0.15500	N 181 E 33 S4SL 3S 1W 4	59
SPRATLING, JOHN	IDS		APPLCERT	19810902	0.01500	S 175 W 1475 E4SL 3S 1W22	59
STALLINGS, DON	IDS		APPLAPD	19810901	0.01500	S 130 W 1550 E4SL 3S 1W22	59
STALLINGS, REX	I		UGWCDS	19300700	0.01100	N 354 W 2624 SESL 3S 1W20	59
STATE OF UTAH DEPARTMENT OF TRANSPORTATION	ID		APPLCERT	19530213	2.00000	N 412 E 35 SWSL 3S 1W14	59
STATE OF UTAH DIVISION OF PARKS & RECREATION	I		UGWC	19110000	0.013	N 950 E 170 S4SL 2S 1W28	59
STEINFELDT, MARLIN J. AND DORALYN M.	I		APPLCERT	19730514	0.10000	N 636 E 39 S4SL 2S 1W34	59
STRATTON, FRANCES E. AND REED J.	IDS		FIXDLAP	19911008	0.01500	S 660 W 1900 E4SL 3S 2W34	59
STROH, KIMBERLY S.	IDS		APPLCERT	19780424	0.01500	N 1155 E 1390 SWSL 3S 1W22	59
SULLIVAN, DOUGLAS AND ILEAN	I		APPLCERT	19540726	2.62000	N 35 E 35 SWSL 3S 1W 9	59
TATEOKA, MATT	I		UGWC	19610627	3.49000	N 35 E 35 SWSL 3S 1W 9	59
TAYLOR, FRANK L.	DS		UGWC	19030000	0.01100	S 80 E 1345 NWSL 3S 1W 2	59
TAYLOR, FRANK L.	DS		UGWC	19030000	0.01100	S 118 E 1728 NWSL 3S 1W 2	59
TAYLOR, JOYCE M.	IDS		APPLCERT	19541117	0.43700	S 662 E 44 NWSL 4S 2W 3	59
TESCH, ARDEN	I		UGWCDS	19210000	0.033	N 910 W 110 SESL 2S 1W29	59
TESCH, WILLIAM H. AND BARBARA J.	D		UGWCDS	1914	0.013	N 1370 W 130 S4SL 2S 1W28	59
THACKER, O. J.	ID		UGWC	19090000	0.027	S 2230 W 190 N4SL 2S 1W28	59
THOMETZ, LOEL	IDS		APPLAPD	19810824	0.01500	N 600 W 1610 E4SL 3S 1W16	59
THOMPSON, MAX	ID		APPLCERT	19640328	0.05700	S 3308 E 130 N4SL 3S 1W29	59
THOMPSON, SHONNA F.	I		APPLAPD	19870409	0.01500	N 40 W 1905 E4SL 3S 1W27	59
THORNE, RONALD H.	IDS		APPLCERT	19610717	2.98000	S 810 W 1295 N4SL 3S 1W28	59
TIDWELL, BERT ALLEN	IDS		APPLCERT	19740524	0.01500	N 875 E 1089 SWSL 3S 1W20	59
TISCHNER, PAUL R.	IDS		APPLAPD	19810617	0.01500	N 1030 W 2310 E4SL 3S 1W16	59
TODD, MAURINE	IDS		UGWC	19710221	0.015	S 2045 W 495 NESL 2S 1W29	59
TOLBERT, CLINTON BERNELL	IDS		APPLAPD	19720419	0.50000	N 335 W 900 SESL 3S 2W12	59
TOLBERT, CLINTON BERNELL AND CONNIE (TRUST)	IDS		FIXDAPP	19901203	0.01500	N 335 W 900 SESL 3S 2W12	59
TOLBERT, CLINTON BERNELL AND CONNIE (TRUST)	IDS		APPLREJ	19901203	0.50000	N 335 W 900 SESL 3S 2W12	59
TRIMBLE, CUTHBERT J.	I		UGWC	19000000	1.74000	N 355 E 2060 SWSL 3S 1W 2	59
TRIMBLE, CUTHBERT J.	IDS		UGWC	19030000	0.08900	N 1745 E 1482 SWSL 3S 1W 2	59
TRIMBLE, CUTHBERT J.	I		UGWC	19030000	0.50000	N 1060 E 968 SWSL 3S 1W 2	59
TRIMBLE, CUTHBERT J.	I		UGWC	19030000	0.01300	N 1020 E 1760 SWSL 3S 1W 2	59
TRIMBLE, CUTHBERT J.	I		UGWC	19030000	1.74000	N 830 E 1365 SWSL 3S 1W 2	59
TRUJILLO FAMILY TRUST	S		APPLAPP	19930430	0.01500	S 30 W 520 NESL 3S 1W10	59
TURNER, FRANK P.	IDS		FIXDAPP	19961121	0.00000	N 764 W 80 SESL 3S 2W33	59
TURNER, LARRY J.	ID		APPLWD	19961121	0.00000	N 764 W 80 SESL 3S 2W33	59
TURNER, LARRY J.	ID		APPLCERT	19770510	0.01500	N 764 W 80 SESL 3S 2W33	59
TURNER, LARRY J.	ID		FIXDAPP	19960314	0.00000	N 964 W 180 SESL 3S 2W33	59
VANLIEUWEN, E. WAYNE & LUCRECIA C.	I		APPLAPP	19890619	0.05400	N 65 W 777 SESL 3S 1W 9	59
VANSLEEUEWEN, CON	ID		APPLAPD	19860429	0.01500	S 450 W 1700 E4SL 3S 2W34	59
VANSLEEUEWEN, CON AND HENNIE	IDS		APPLAPD	19820112	0.01500	S 450 W 1700 E4SL 3S 2W34	59
VANSLEEUEWEN, PAUL R. & JOLEN	IDS		APPLAPD	19811117	0.01500	S 450 W 1700 E4SL 3S 2W34	59
VANSLEEUEWEN, RONALD & JANET	IDS		APPLAPD	19820330	0.01500	S 450 W 1700 E4SL 3S 2W34	59
WALKER, ARLENE D.	ID		UGWCDS	19280500	0.00900	S 3006 E 158 N4SL 3S 1W28	59
WALKER, E. R.	I		APPLAPD	19810804	0.01500	N 340 E 1350 W4SL 3S 1W11	59
WALKER, GEORGE J.	I		APPLCERT	19610526	1.56000	S 1105 W 710 N4SL 3S 2W35	59
WALKER, JOHN	I		APPLCERT	19750306	0.03200	N 1507 W 233 SESL 2S 1W27	59
WALKER, LYNN	I		APPLCERT	19870923	0.01500	N 721 E 419 W4SL 3S 1W 8	59
WARREN, DEAN T.	I		APPLCERT	19790508	0.02100	S 772 W 284 NESL 3S 1W 3	59
WELLS, D. DEAN	IDS		APPLCERT	19680715	0.01500	N 265 E 805 S4SL 3S 1W17	59

WELLS, NAOMI G.		59 2542	UGWCDIS	19000000	0.01100 S 2340 E 149 NWSL 3S 1W11	59
WEST JORDAN, CITY OF	C	59 1299	APPLREJD	19570123	W 100 E4SL 3S 1W 7	59
WEST JORDAN, CITY OF		59 1572	APPLAPP	19600714	200 E 1500 NWSL 2S 1W35	59
WEST JORDAN, CITY OF		59 1298	APPLREJD	19570123	500 E 2050 SWSL 3S 1W 2	59
WEST JORDAN, CITY OF		59 2883	UGWCDIS	1934	660 E 85 NWSL 2S 1W35	59
WEST JORDAN, CITY OF	I	59 3009	UGWC	19100000	0.01100 S 1275 W 530 NESL 2S 1W34	59
WHELWRIGHT, DAVID A. AND MAVIS G.	I	59 5101	APPLAPP	19850506	0.05400 N 65 W 777 SESL 3S 1W 9	59
WILCOX, LORETTA	IDS	59 5074	APPLCERT	19880809	0.01500 S 1471 W 151 NESL 3S 1W30	59
WILCOX, WALTER C AND NELLIE S.	S	59 2641	UGWC	19040000	0.00700 N 1385 E 150 W4SL 3S 1W 2	59
WILEY, ROBERT G.	ID	59 5229	APPLCERT	19870612	0.01500 N 117 W 286 SESL 3S 1W 9	59
WILKINSON, RICHARD AND ROMONA	I	59 2131	UGWCDIS	19200000	0.02200 N 255 W 105 E4SL 3S 1W21	59
WILLIAMSON, KENNETH HAROLD	DS	59 1716	APPLUNAP	19640213	0.25000 N 300 W 779 E4SL 3S 1W21	59
WITHERSPOON, JAMES R.	IDS	59 1180	APPLCERT	19540804	0.01500 N 118 E 291 S4SL 3S 2W33	59
WITHERSPOON, JAMES R.	IDS	59 5324	APPLAPP	19910416	0.01500 N 110 E 655 S4SL 3S 2W33	59
WOODS, THOMAS C. AND NELL (JR.)	IDS	59 1011	APPLNPR	19520421	0.01500 S 70 E 10 W4SL 3S 1W21	59
YARBERRY, AFTON L.	IS	59 3619	APPLAPD	19700513	0.01500 S 1160 W 835 N4SL 3S 1W16	59
YATES, J. MAC AND GLORIA RUTH	IS	59 5059	APPLCERT	19840726	0.06700 N 962 W 584 SESL 3S 1W 9	59
YERGENSEN, R. L.	I	59 4356	DIL	1903	4.00000 N 1755 E 1655 W4SL 3S 1W11	59
YOUNG, PARLEY A.		59 2467	UGWCDIS	19050000	0.13000 N 1017 E 153 W4SL 3S 1W14	59

PRIORITY	OWNER	USES	WRNUM	STATUS	FLOW (CFS)	LOCATION	AREA CODE
18730000	ROBBINS, GOLDEN W.	I S	59 1770	DIL	0.50000	N 1620 W 250 S4SL 3S 1W14	59
18840000	MCDUGAL, EDMUND L.		59 2398	UGWC	0.06700	S 1075 E 2179 NWSL 3S 1W 2	59
18860000	MAKRIS, GEORGE	S	59 2263	UGWC	0.02200	N 810 W 730 SESL 2S 1W27	59
1890	LARSEN, ROY L. AND AUDREY L.		59 2799	UGWC	0.01100	S 3027 E 140 N4SL 3S 1W27	59
18900000	SALT LAKE COUNTY RECREATION DEPARTMENT		59 3090	UGWC	0.03300	S 429 W 820 NESL 3S 1W 4	59
18900000	KENNECOTT UTAH COPPER CORPORATION		59 2065	UGWC	1.50000	S 698 E 1142 W4SL 3S 2W29	59
18920000	GARDNER, JOHN R. AND EDWIN F.	D	59 2526	UGWC	0.00900	N 525 E 300 SWSL 2S 1W35	59
18930000	MAXFIELD, E. O. & ROSAMOND P.		59 2100	UGWC	0.02200	S 2798 W 218 N4SL 3S 1W27	59
18940000	AFCO DEVELOPMENT COMPANY		59 2282	UGWC	0.02200	N 1270 W 682 SWSL 3S 1W 7	59
18950000	PETERSON, ROY G. AND BEVERLY L.	I S	59 2099	UGWC	0.00900	S 412 W 55 NESL 3S 1W10	59
18960000	GAILEY, GRACE E.	IDS	59 2283	UGWC	0.01100	N 2282 E 1975 SWSL 3S 1W11	59
18960000	GREENWOOD, MARK H.	IDS	59 2147	UGWC	0.02200	N 865 W 315 E4SL 2S 1W34	59
18960000	SALT LAKE COUNTY	O	59 2368	UGWC	0.02700	N 2 E 750 S4SL 2S 1W33	59
18960000	KEMP, KAY F.		59 3796	UGWC	0.02200	N 865 W 315 E4SL 2S 1W34	59
18960000	RICHINS, MARY ANN	IDS	59 3464	UGWC	0.02200	N 865 W 315 E4SL 2S 1W34	59
18960000	KENNECOTT UTAH COPPER CORPORATION		59 2554	UGWC	0.02200	S 375 E 380 NWSL 3S 2W27	59
18960000	NESOME, RICHARD C. & RUTH H.	S	59 1940	UGWC	0.00400	N 1310 E 2412 SWSL 3S 1W11	59
18960000	MCDUGAL, DANIEL W.	IDS	59 2239	UGWC	0.02200	N 2730 E 800 SWSL 2S 1W26	59
18990000	JENSEN AND WILKINSON INCORPORATED	I S	59 2607	UGWC	0.02200	S 5050 W 280 NESL 3S 1W15	59
18990000	GOECKERITZ, RUDOLPH E. & DENISE	I S	59 4027	UGWC	1.16000	N 400 W 650 S4SL 3S 1W 2	59
18990000	BECKSTEAD, EDWARD B.		59 2589	UGWC	0.02200	S 1207 W 166 NESL 3S 1W27	59
1900	CARTER, JAMES W.		59 2644	UGWC	0.007	S 135 W 2050 N4SL 2S 1W28	59
1900	SMITH, CLINTON E. AND ALMEDA H.		59 2713	UGWC	0.500	S 835 W 580 NWSL 2S 1W28	59
19000000	GEDGE, NATHAN R. AND GRACE	IDS	59 2952	UGWC	0.06600	S 1525 W 250 NESL 3S 1W10	59
19000000	SCHMIDT, PAUL D.	I	59 2136	UGWC	0.20000	N 1768 W 170 S4SL 3S 1W 3	59
19000000	MC MULLIN, URBAN B. & VERDA H.	I S	59 3080	UGWC	0.03300	S 1968 W 264 NESL 3S 1W15	59
19000000	FULLMER, GENE L. & DELORES H.		59 4364	UGWC	0.50000	N 1785 E 1578 W4SL 3S 1W11	59
19000000	IWAMOTO, TAKEO		59 2552	UGWC	0.02200	S 100 W 186 N4SL 3S 1W10	59
19000000	WELLS, NAOMI G.	DS	59 2542	UGWC	0.01100	S 2340 E 149 NWSL 3S 1W11	59
19000000	JONES, MERLIN H.	I S	59 2842	UGWC	0.02200	S 180 E 105 W4SL 3S 1W 3	59
19000000	TRIMBLE, CUTHBERT J.	IDS	59 3262	UGWC	1.74000	N 355 E 2060 SWSL 3S 1W 2	59
19010000	N. L. K. FAMILY TRUST		59 5387	UGWC	0.03300	S 1075 W 150 N4SL 3S 1W29	59
1902	ANDERSON, MAX W. AND MAURINE M.		59 2524	UGWC	0.03300	N 1370 E 174 SWSL 3S 1W11	59
19020000	HOLT, ALMA M.	I	59 1987	UGWC	0.01100	S 1420 W 170 NESL 3S 1W15	59
19020000	NAYLOR, ROBERT A. AND BERTHA	I S	59 2288	UGWC	0.03300	S 2470 W 245 NESL 3S 1W10	59
19020000	FORMAN, STANFORD M.		59 2681	UGWC	0.22300	S 1458 W 140 NESL 3S 1W16	59
1903	DICK, JAMES		59 2815	UGWC	0.02200	N 600 E 145 SWSL 2S 1W35	59
1903	CHAVEZ, TONY A.	I	59 4280	DIL	4.00000	N 1380 E 1665 W4SL 3S 1W11	59
1903	JEPPSEN, BRUCE	I	59 4355	DIL	4.00000	N 1755 E 1655 W4SL 3S 1W11	59
1903	JEPPSEN, BRUCE	I	59 4254	DIL	4.00000	N 595 E 460 W4SL 3S 1W11	59
1903	YERGENSEN, R. L.	I	59 4356	DIL	4.00000	N 1755 E 1655 W4SL 3S 1W11	59
1903	CHAVEZ, TONY A.	I	59 4357	DIL	4.00000	N 1755 E 1655 W4SL 3S 1W11	59
1903	BROWN, LULA	I	59 1951	UGWC	0.02700	N 1445 W 220 SESL 2S 1W27	59
19030000	TRIMBLE, CUTHBERT J.	I	59 3787	UGWC	1.74000	N 830 E 1365 SWSL 3S 1W 2	59
19030000	GARDNER, JOHN R. AND EDWIN F.	I S	59 2525	UGWC	2.00000	N 1600 E 35 SWSL 2S 1W35	59
19030000	TRIMBLE, CUTHBERT J.	I	59 3786	UGWC	0.50000	N 1060 E 968 SWSL 3S 1W 2	59
19030000	NAYLOR, BETTY G.	I	59 4747	UGWC	0.10000	N 825 E 500 SWSL 2S 1W35	59
19030000	TRIMBLE, CUTHBERT J.	IDS	59 2557	UGWC	0.08900	N 1745 E 1482 SWSL 3S 1W 2	59
19030000	JORDAN, DEAN L. III AND ROXANE D.	I	59 1953	UGWC	0.22300	N 2115 W 220 SESL 2S 1W27	59
19030000	RASMUSSEN, CLYDE AND ILA R.	IDS	59 2361	UGWC	0.00400	S 520 E 1000 NWSL 3S 1W 2	59
19030000	TRIMBLE, CUTHBERT J.	D	59 3784	UGWC	0.01300	N 1020 E 1760 SWSL 3S 1W 2	59
19030000	KOURIS, ROSE G. AND MARY N.	ID	59 2350	UGWC	0.04500	N 155 W 1830 SESL 2S 1W27	59
19030000	BOARD OF EDUCATION (JORDAN SCHOOL DISTRICT)	I S	59 2003	UGWC	0.01100	N 112 W 420 SESL 2S 1W33	59
19030000	FULLMER, GENE L. & DELORES H.		59 4363	UGWC	1.00000	N 1755 E 1655 W4SL 3S 1W11	59

19030000	TAYLOR, FRANK L.	DS	59 2829	UGWC	0.01100 S 80 E 1345 NWSL 3S 1W 2	59
19030000	TAYLOR, FRANK L.	DS	59 2830	UGWC	0.01100 S 118 E 1728 NWSL 3S 1W 2	59
19030000	NELSON, HENRY		59 2293	UGWCDS	0.06700 S 787 E 654 NWSL 3S 1W14	59
19030000	REID, JOHN A AND NOLA M.	ID	59 2292	UGWC	0.04500 N 1906 E 150 SWSL 3S 1W11	59
1904	MITCHELL, MARCUS		59 1869	UGWCDS	0.00200 S 1589 E 2820 NWSL 3S 1W14	59
19040000	PATTERSON, REX	ID	59 3053	UGWC	0.02200 S 80 W 630 NESL 2S 1W34	59
19040000	BIGLER, LOUIS B.		59 2045	UGWCDS	0.01800 S 340 W 198 NESL 3S 1W 3	59
19040000	BOARD OF EDUCATION (JORDAN SCHOOL DISTRICT)		59 2491	UGWCDS	0.04500 S 466 W 352 E4SL 3S 1W 3	59
19040000	SCHMIDT, PAUL D.	ID	59 2553	UGWC	0.01800 N 1120 W 156 S4SL 3S 1W 3	59
19040000	WILCOX, WALTER C AND NELLIE S.	S	59 2641	UGWC	0.00700 N 1385 E 150 W4SL 3S 1W 2	59
19050000	YOUNG, PARLEY A.		59 2467	UGWCDS	0.13000 N 1017 E 153 W4SL 3S 1W14	59
19050000	FINLAYSON, MAX A.		59 2414	UGWCDS	0.009 N 775 E 805 SWSL 2S 1W28	59
19050000	CASH, LAVON ISAKSON		59 2608	UGWCDS	0.01100 S 2464 E 1558 NWSL 3S 1W14	59
1906	ROBERTS, G. ELDON		59 1930	UGWCDS	0.056 S 1280 W 140 N4SL 2S 1W28	59
19060000	DIXIE SIX CORPORATION	I S	59 2281	UGWCDS	0.04500 N 187 W 1645 S4SL 3S 1W22	59
19060000	GOODRIDGE, JAMES WILLIS	DS	59 3323	UGWC	0.01100 N 580 E 95 SWSL 2S 1W26	59
19060000	BETTS, REID G. AND LUCILLE B.	I	59 2375	UGWC	0.03300 N 2092 W 200 SESL 3S 1W10	59
19060000	BIGLER, LOUIS B. AND HAZEL A.	DS	59 2075	UGWC	0.75000 S 330 W 1320 NESL 3S 1W 3	59
19060000	COOPER, NEWELL J.	DS	59 2351	UGWC	0.00900 N 120 E 141 SWSL 3S 1W 2	59
1907	SALT LAKE COUNTY, REAL ESTATE DIVISION, FINANCE DEPT.		59 2816	UGWCDS	0.01100 N 800 E 132 W4SL 3S 1W22	59
19070000	JORDAN, DEAN L. III AND ROXANE D.	ID	59 1952	UGWC	0.03300 S 585 W 225 E4SL 2S 1W27	59
19080000	PANDO, JACOB	I	59 2686	UGWC	0.02700 N 540 W 160 SESL 2S 1W33	59
19080000	SHULSEN, LARKEN H.	I S	59 2343	UGWC	0.01100 S 425 E 200 N4SL 2S 1W34	59
19080000	SMITH, F. E.	IDS	59 2037	UGWC	0.02200 N 1600 W 575 S4SL 3S 1W22	59
19080000	SOFFE, VAUGHN C.	ID	59 2396	UGWC	0.04500 S 2211 E 2879 NWSL 3S 1W14	59
19080000	RICHARDSON, DUANE G. (TRUSTEE, RICHARDSON FAMILY T.)	DS	59 3005	UGWC	0.00700 S 760 E 140 N4SL 3S 1W 2	59
1909	BOARD OF EDUCATION (JORDAN SCHOOL DISTRICT)		59 2849	UGWCDS	0.01800 S 1152 W 77 NESL 3S 1W15	59
1909	SALT LAKE COUNTY C/O BILL DUNN MTN. VIEW GOLF COURSE	D	59 1972	UGWCDS	0.00900 N 320 E 1100 S4SL 2S 1W33	59
19090000	RICHARDS, STUART H.		59 2862	UGWC	0.00600 S 1029 W 208 N4SL 3S 1W 3	59
19090000	SOUTHERN PACIFIC TRANSPORTATION COMPANY		59 2676	UGWCDS	0.06700 S 3445 E 448 N4SL 3S 1W 6	59
19090000	SOUTHERN PACIFIC TRANSPORTATION COMPANY		59 2675	UGWCDS	0.06700 S 3404 E 422 N4SL 3S 1W 6	59
19090000	THACKER, O. J.	D	59 1855	UGWC	0.027 S 2230 W 190 N4SL 2S 1W28	59
19100000	WEST JORDAN, CITY OF	I	59 3009	UGWC	0.01100 S 1275 W 530 NESL 2S 1W34	59
19100000	HOLT, MARIE		59 2007	UGWCDS	0.01100 S 1820 W 200 N4SL 3S 1W15	59
19100000	NIELSEN, HENRY D.	I S	59 3214	UGWC	0.01100 N 205 E 438 S4SL 2S 1W27	59
19100000	CAIN, DONEL D. AND VELMA M.	ID	59 3012	UGWCDS	0.04500 S 4158 W 2879 NESL 3S 1W15	59
1911	STEINFELDT, MARLIN J. AND DORALYN M.	ID	59 1872	UGWCDS	0.01300 S 5248 W 2823 NESL 3S 1W15	59
19110000	MADSEN, WAYNE AND MARION	ID	59 2741	UGWC	0.013 N 950 E 170 S4SL 2S 1W28	59
19110000	NOGALES, RITO AND URVANA	I	59 2274	UGWC	0.056 N 150 E 690 S4SL 2S 1W28	59
19111115	NAYLOR, DEAN		59 2264	UGWC	0.04500 N 115 W 972 SESL 2S 1W27	59
191200	CRANE, J. REED AND RAE S.		59 2033	UGWCDS	0.01500 S 2241 E 146 NWSL 3S 1W14	59
191207	BRECKON, DAVID C.		59 2916	UGWCDS	0.01100 N 2190 E 175 SWSL 3S 2W35	59
1914	TESCH, WILLIAM H. AND BARBARA J.	IDS	59 1847	UGWCDS	0.18900 S 1402 W 2941 NESL 3S 1W15	59
19140000	PETERSON, RODNEY K.	ID	59 1800	UGWCDS	0.013 N 1370 W 130 S4SL 2S 1W28	59
19150000	KOGIANES, JOHN G.	ID	59 2298	UGWC	0.01100 S 1296 E 107 NWSL 3S 1W29	59
19160000	QUILTER, JAMES O. AND VIRGINIA R.	DS	59 2430	UGWC	0.00900 S 490 W 145 E4SL 2S 1W34	59
19160000	GARDNER, RALPH W.	DS	59 2846	UGWC	0.02700 N 445 W 620 S4SL 2S 1W35	59
19160000	MCKEE, CLIFTON A.	IDS	59 2371	UGWC	0.02200 N 755 E 1625 SWSL 2S 1W35	59
19170000	FULLMER, LAWRENCE W. & MARY E.	IDS	59 2320	UGWC	0.00100 S 3955 W 130 N4SL 3S 1W16	59
19170000	BILLS, CECILIA M.	D	59 4298	DIL	0.00400 N 230 W 300 SESL 3S 1W 4	59
19170000	HAMILTON, LOWELL AND MARY L.	I	59 2404	UGWC	0.01100 S 2550 W 2445 NESL 3S 1W29	59
19171100	MABEY, DANIEL L. AND ANN W.	ID	59 2720	UGWC	0.07000 S 597 W 1350 NESL 4S 2W 3	59
19180000	CARDWELL, ROBERT L. (FAMILY TRUST)	IDS	59 2168	UGWC	0.01300 S 2656 E 146 N4SL 3S 1W16	59
19181100	BECKSTEAD, EDWARD B.		59 2256	UGWC	0.08900 N 1224 W 308 S4SL 3S 1W29	59
19190000	GREENWOOD, MARK H.	I S	59 2322	UGWCDS	0.00100 S 110 W 670 NESL 3S 1W29	59
19190000	LDS CHURCH, GRANT STAKE		59 2604	UGWC	0.25000 N 500 W 500 E4SL 2S 1W34	59
19190000			59 2146	UGWCDS	0.01100 N 185 E 404 W4SL 3S 1W21	59

19200000	BLOOD, KAY H.	S	59 2183	UGWC	0.03300	N 1940 W	936 SE SL 3S	1W20	59
19200000	CONTINENTAL COPPER AND STEEL INDUSTRIES INCORPORATED		59 3089	UGWC DIS	0.03300	S 110 W	50 NESL 3S	1W 5	59
19200000	DANSIE, JESSE H.	IDS	59 3177	UGWC	0.01500	N 1275 W	270 S4SL 3S	2W34	59
19200000	WILKINSON, RICHARD AND ROMONA		59 2131	UGWC DIS	0.02200	N 255 W	105 E4SL 3S	1W21	59
19200000	LDS CHURCH, MILL CREEK STAKE, ATTN: H. D. LOWRY		59 2133	UGWC DIS	0.02700	S 3063 W	172 N4SL 3S	1W28	59
19200000	NELSON, CHARLES R. AND ELLEN E.	I S	59 2972	UGWC	0.04500	N 944 W	200 E4SL 3S	1W 3	59
19200000	HAUN, ARCH L. AND EVA F.		59 2170	UGWC DIS	0.02600	S 332 W	168 N4SL 3S	1W 4	59
19200000	GARDNER, DUNCAN R.	S	59 3076	UGWC	0.03300	N 1005 W	140 SE SL 2S	1W34	59
19200000	NEFF, NELDON J. AND ELAINE	I	59 2290	UGWC	0.05600	S 65 W	143 N4SL 3S	1W28	59
19201100	CAHOON, JAY C.		59 2169	UGWC DIS	0.02200	S 1178 W	148 N4SL 3S	1W 4	59
19210000	TESCH, ARDEN		59 2052	UGWC DIS	0.033	N 910 W	110 SE SL 2S	1W29	59
19210000	ERICKSON, ERNEST G.		59 2411	UGWC DIS	0.22200	N 302 W	445 E4SL 3S	1W 5	59
19210600	J. N. HUTCHINGS & SONS INCORPORATED	I	59 2631	UGWC DIS	0.06700	S 480 E	152 N4SL 3S	1W 9	59
19220600	BIGLER, LOUIS B.	ID	59 3246	UGWC	1.00000	S 827 W	1237 NESL 3S	1W 3	59
1924	GARDNER, DUNCAN R.		59 2429	UGWC	0.08000	N 1005 W	141 SE SL 2S	1W34	59
19240000	JENSEN, MRS. GEORGE M.		59 1993	UGWC DIS	0.022	N 2540 W	120 S4SL 2S	1W28	59
19240701	JENSEN, VERNON B. AND FERN L.	IDS	59 2246	UGWC DIS	0.00400	S 1403 W	4740 NESL 3S	1W15	59
19240800	PASCOE, ERWIN L. JR. AND BEATRICE		59 2683	UGWC	0.00200	S 1192 E	186 N4SL 3S	1W29	59
19241000	NEWTON, WILLIAM D. AND LAVELL E.		59 2409	UGWCLAPD	0.01100	N 190 E	1012 SWSL 3S	1W28	59
19250000	COOPER, WILLIAM A. AND DARLENE	I	59 1838	UGWC	0.01100	N 610 E	80 S4SL 3S	1W16	59
19250000	GLOVER, GEOFFREY	IDS	59 2354	UGWC	0.02200	S 119 W	339 NESL 3S	1W28	59
19250000	ORTEGA, JOSEPH A. AND ZELMA M.	D	59 2967	UGWC	0.11100	S 330 E	1422 NWSL 2S	1W35	59
1926	BUSH, GUSTAVA E.	DS	59 1966	UGWC DIS	0.02200	N 177 W	1547 SE SL 3S	1W19	59
19260000	SPRATLING, JOHN		59 2685	UGWC	0.02700	S 1628 W	120 NESL 3S	1W 9	59
1927	PETERSEN, ROY C.		59 2844	UGWC DIS	0.02200	S 1420 W	158 N4SL 3S	1W29	59
19270000	BIGLER, LOUIS B. AND HAZEL A.	I	59 2434	UGWC	2.00000	N 147 W	706 E4SL 3S	1W 3	59
19280500	WALKER, ARLENE D.		59 2163	UGWC DIS	0.00900	S 3006 E	158 N4SL 3S	1W28	59
19290000	NORTH JORDAN IRRIGATION COMPANY	DS	59 2453	UGWC	3.00000	N 810 W	730 SE SL 2S	1W27	59
19290000	KERKMAN, FRED W.		59 2817	UGWC	0.01100	S 150 E	912 NWSL 3S	1W 3	59
19290000	SHARP, YOUNG		59 2687	UGWC DIS	0.00000	S 860 E	220 N4SL 3S	1W 3	59
19290000	NORTH JORDAN IRRIGATION COMPANY	I S	59 2460	UGWC	5.00000	N 2070 E	580 SWSL 2S	1W26	59
19290000	POWELL, KEITH L. AND MELVA J.	IDS	59 2034	UGWC	0.00400	S 1155 E	115 N4SL 3S	1W16	59
19290000	LUCAS, GUSTAVE	S	59 3042	UGWC	0.03300	S 2510 W	1570 NESL 3S	1W20	59
19290000	NORTH JORDAN IRRIGATION COMPANY	I S	59 2457	UGWC	3.50000	N 1580 E	530 SWSL 2S	1W26	59
19291000	SCHORR, WILLIAM H.	I S	59 2724	UGWC	0.011	S 75 W	220 E4SL 2S	1W29	59
19300000	HEUGHS CREEK ASSOCIATES LLC	IDS	59 2416	UGWC	0.05600	S 324 E	235 N4SL 3S	1W32	59
19300000	PHELPS, WILFORD E. & ISABELL	IDS	59 3769	UGWC	0.02200	S 987 W	150 N4SL 3S	1W29	59
19300000	SIMMONS, KENNETH M. & ONEITA P.		59 3122	UGWC DIS	0.01100	S 2543 W	648 NESL 3S	1W20	59
193007	MAYNARD, THEODORE		59 2877	UGWC DIS	0.00700	S 1879 W	5167 NESL 3S	1W15	59
19300700	STATE OF UTAH DEPARTMENT OF TRANSPORTATION		59 2084	UGWC DIS	0.01100	N 354 W	2624 SE SL 3S	1W20	59
19310000	MARSHALL, EARL F.	D	59 2410	UGWCLAPD	0.11100	S 1702 W	155 N4SL 3S	1W 4	59
19310000	PETERSEN, ROY C.	IDS	59 3263	UGWC	0.01500	S 1437 W	165 N4SL 3S	1W29	59
19310600	BROADHEAD, ARVIS E.	IDS	59 2154	UGWC	0.11100	S 3303 W	203 N4SL 3S	1W28	59
19311100	MCMULLIN, CLELL V.	IDS	59 2269	UGWC	0.06700	N 2620 W	130 S4SL 3S	1W16	59
19320000	HAYMORE, BRUCE	IDS	59 5464	UGWC	0.00000	S 166 W	78 E4SL 3S	1W21	59
19320000	MURPHY, GUS	S	59 3746	UGWCLIT	0.02200	S 166 W	78 E4SL 3S	1W21	59
19320815	KENNECOTT UTAH COPPER CORPORATION		59 2750	UGWC DIS	0.02200	N 100 E	3334 SWSL 3S	2W 8	59
19330000	BRINKERHOFF, CLAUD	I	59 1969	UGWC	0.00200	N 1050 E	110 SWSL 2S	1W26	59
19330000	ACCOUNTING AND MANAGEMENT ASSOCIATES		59 2556	UGWC DIS	0.22000	N 50 E	133 W4SL 3S	1W 2	59
19330000	ACCOUNTING AND MANAGEMENT ASSOCIATES		59 2555	UGWC DIS	0.22000	N 52 E	65 W4SL 3S	1W 2	59
19330200	BUTTERFIELD, ELDON AND SHIRLEY	S	59 2318	UGWC	0.00000	S 141 W	920 NESL 3S	1W30	59
19330800	BOSSHARDT, JOHN	I S	59 1965	UGWC	0.01100	S 93 E	127 N4SL 3S	1W21	59
1934	BECKSTEAD, DALE	I S	59 5473	UGWC	0.00000	S 1255 W	325 N4SL 3S	1W26	59
1934	MCGRATH, JERRY L. & PEGGY Z.	I S	59 5473	UGWC	0.00000	S 1255 W	325 N4SL 3S	1W26	59
1934	WEST JORDAN, CITY OF		59 2883	UGWC DIS	0.22000	S 660 E	85 NWSL 2S	1W35	59
19340000	OLSEN, JOHN H.	I	59 3336	DIL	0.06700	S 1068 E	60 NWSL 3S	1W 2	59
19340000	COOK, JOSEPH E.	IDS	59 3797	UGWC	0.01500	N 160 W	400 S4SL 2S	1W35	59

19340000	GARDNER, RALPH	I	59 4285	DIL	2.50000	S	1068 E	60 NWSL	3S	1W 2	59
19340000	GARDNER, EDWIN F. & JOHN R.	I S	59 3909	UGWC	2.50000	S	1068 E	60 NWSL	3S	1W 2	59
19340000	RASMUSSEN, CLYDE & ILA R.	I	59 4286	DIL	2.50000	S	1068 E	60 NWSL	3S	1W 2	59
19340000	PETERSON, MRS. CLYDE	DS	59 3051	UGWC	0.04500	S	2536 W	280 NESL	3S	1W20	59
19340000	LAWSON, WOODROW AND RUBY	IDS	59 4299	DIL	0.02700	N	1030 W	615 SESL	3S	1W 4	59
19350000	IWAMOTO, TAKEO	ID O	59 4544	UGWC	0.02200	S	50 W	125 N4SL	3S	1W10	59
19361112	BRECKON, DAVID C.		59 84	UGWC	0.03400	S	1401 W	290 N4SL	3S	1W15	59
19380114	KENNECOTT UTAH COPPER CORPORATION	IDS	59 93	APPLCERT	0.00400	N	1362 E	650 SWSL	3S	2W32	59
19410529	HAUN, ARCH L. & EVA F.	S	59 245	APPLNPR	0.01500	S	432 W	168 N4SL	3S	1W 4	59
19431029	GARDNER, HOWARD D.	ID	59 388	APPLNPR	0.01500	S	290 W	145 E4SL	2S	1W34	59
19440515	CAVENDER, THELMA	D	59 404	APPLNPR	0.01500	N	3068 E	118 SWSL	2S	1W26	59
19440518	MECHAM, LAVERL (GENERAL PERSONAL REPRESENTATIVE)	I S	59 405	APPLNPR	0.01500	N	116 E	672 W4SL	3S	1W 2	59
19440927	CHAVEZ, JOSE		59 420	APPLDIS	0.01500	S	400 E	1280 NWSL	2S	1W35	59
19461126	MONTOYA, ALEX AND MARY L.		59 526	APPLDIS	0.01500	N	1025 E	195 S4SL	3S	2W33	59
19470424	CHARON, JUNE	I S	59 564	APPLNPR	0.01500	S	101 E	899 W4SL	3S	1W21	59
19470515	SMITH, JOHN W.	IDS	59 569	APPLNPR	0.01500	N	600 E	90 W4SL	3S	1W 2	59
19470729	PHELPS, ORVAL K. & FLORENCE J.	ID	59 581	APPLNPR	0.01500	N	230 E	90 W4SL	3S	1W15	59
19471007	ATWOOD, JAMES M.	I S	59 598	APPLNPR	0.01500	N	200 W	1975 E4SL	3S	1W 5	59
19480217	KENNECOTT UTAH COPPER CORPORATION		59 609	APPLCERT	4.00000	S	698 E	1142 W4SL	3S	2W29	59
19480604	RADMALL, GLEN	ID	59 638	APPLDIS	0.01500	S	49 E	75 NWSL	3S	1W 2	59
19480614	OLSEN, JOHN H.		59 641	APPLNPR	0.01500	S	1043 E	140 NWSL	3S	1W 2	59
19480722	PETERSON, DONALD L. AND F. MILES		59 654	APPLDIS	0.01500	S	119 W	168 N4SL	3S	1W16	59
19480830	MAURER, JACKSON S.	D	59 666	APPLNPR	0.01500	N	625 W	110 S4SL	3S	1W11	59
19490922	SEAL, EMMA V.	IDS	59 764	APPLNPR	0.01500	S	1000 E	105 N4SL	3S	1W32	59
19510124	GUSS, ABE	O	59 328	APPLCERT	0.12600	N	450 E	396 S4SL	2S	1W27	59
19510912	BUSHNELL, LEROY C.		59 980	APPLDIS	0.01500	N	1230 W	895 E4SL	3S	1W16	59
19511108	HANCOCK, FORREST	IDS	59 995	APPLNPR	0.01500	S	1235 E	1185 N4SL	3S	1W14	59
19520405	KENNECOTT UTAH COPPER CORPORATION	I O	59 1006	APPLPDPT	1.00000	S	698 E	1142 W4SL	3S	2W29	59
19520408	BIGLER, LOUIS B.	ID O	59 1007	APPLNPR	0.01500	S	592 W	163 NESL	3S	1W 3	59
19520421	WOODS, THOMAS C. AND NELL (JR.)	IDS	59 1011	APPLNPR	0.01500	S	70 E	10 W4SL	3S	1W21	59
19530213	STATE OF UTAH DIVISION OF PARKS & RECREATION	I	59 1078	APPLCERT	2.00000	N	412 E	35 SWSL	3S	1W14	59
19530313	GIFFORD, JON TROY	IDS O	59 1091	APPLCERT	0.08900	S	455 W	212 NESL	3S	1W 3	59
19530627	JORDAN, DEAN L. III AND ROXANE D.	ID	59 1112	APPLNPR	0.01500	S	585 W	225 E4SL	2S	1W27	59
19530709	BUHLER, JOSEPH K.	O	59 1116	APPLCERT	0.03200	N	110 E	1630 SWSL	3S	1W 8	59
19540608	SOUTH JORDAN, TOWN OF	I	59 1001	APPLCERT	0.50000	N	320 E	666 W4SL	3S	1W14	59
19540726	TATEOKA, MATT	I	59 1176	APPLCERT	2.62000	N	35 E	35 SWSL	3S	1W 9	59
19540804	WITHERSPOON, JAMES R.	DS	59 1180	APPLCERT	0.01500	N	1188 E	291 S4SL	3S	2W33	59
19540817	LARSON, STERLING B.	I S	59 1166	APPLCERT	1.00000	N	1296 E	44 S4SL	3S	1W11	59
19540911	BUTTERFIELD, JAMES S.	I	59 1188	APPLCERT	1.18000	N	50 E	40 SWSL	3S	2W26	59
19540913	RIVERTON CITY CORPORATION	C	59 1189	APPLCERT	2.46000	S	320 W	122 NESL	3S	1W31	59
19541108	SCHMIDT, JOSEPH J.	I	59 1198	APPLCERT	5.00000	N	110 E	41 W4SL	3S	1W 9	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	N	2300 E	1500 SWSL	3S	2W33	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	S	1500 E	1400 NWSL	3S	2W34	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	S	1500 W	1450 NESL	3S	2W34	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	N	1000 E	2300 SWSL	3S	2W34	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	S	1250	E4SL	3S	2W33	59
19541117	DANSIE, JESSE RODNEY	I S	59 1200	APPLCERT	1.19000	S	740 E	1330 W4SL	3S	2W33	59
19541117	TAYLOR, JOYCE M.	IDS	59 3879	APPLCERT	0.43700	S	662 E	44 NWSL	4S	2W 3	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	S	2600 W	1450 NESL	3S	2W34	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	S	950 E	1050 E4SL	3S	2W33	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	N	1500 E	2000 SWSL	3S	2W33	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	S	950	E4SL	3S	2W33	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	N	1900 E	2400 SWSL	3S	2W34	59
19541117	DANSIE, JESSE	I	59 1249	APPLAP	3.79300	N	1711 W	1316 SESL	3S	2W34	59
19550211	HERRIMAN PIPELINE & DEVELOPMENT CO. (HELD BY BWR)	I	59 16	APPLCERT	0.41000	N	1711 W	1316 SESL	3S	2W34	59
19550211	HERRIMAN IRRIGATION CO.	I	59 17	APPLAPD	4.59000	N	1711 W	1316 SESL	3S	2W34	59
19550305	JORDAN VALLEY WATER CONSERVANCY DISTRICT	I	59 1210	APPLCERT	3.55000	S	75 W	1768 NESL	3S	1W30	59

19550305	HERRIMAN PIPELINE & DEVELOPMENT CO. (HELD BY BWR)	IDS	O	59 1212	APPLCERT	0.98300	N 2020 W 100 SE SL 3S 2W34	59
19560521	QUILTER, JAMES O. & VIRGINIA A.	ID		59 1263	APPLNPR	0.01500	N 1687 W 200 S4SL 3S 1W28	59
19560620	KENNECOTT UTAH COPPER CORPORATION	ID		59 1271	APPLNPR	0.01500	S 371 W 147 N4SL 3S 2W32	59
19560709	BROWN, DARREL H.	S		59 1275	APPLNPR	0.01500	S 431 E 29 NWSL 3S 1W32	59
19560717	RUSSELL, CARL			59 1277	APPLDIS	0.01500	S 715 W 161 N4SL 3S 1W 4	59
19561008	BOWLES, ROBERT I.	I		59 4751	APPLCERT	1.16000	S 2531 E 1083 NWSL 3S 2W35	59
19561008	BOWLES, ROBERT I.	I		59 4751	APPLCERT	1.16000	S 353 E 666 NWSL 3S 2W35	59
19570123	WEST JORDAN, CITY OF			59 1299	APPLREJD	0.00000	W 100 E4SL 3S 1W 7	59
19570123	WEST JORDAN, CITY OF	ID		59 1298	APPLREJD	2.50000	N 500 E 2050 SWSL 3S 1W 2	59
19570131	BOOTH, WILLIAM H.			59 1302	APPLNPR	0.01500	N 635 E 145 SWSL 3S 1W 5	59
19570328	RUSSELL, CARL	I S		59 1307	APPLDIS	0.01500	S 690 W 70 N4SL 3S 1W 4	59
19580122	DIMOND, STANLEY G.			59 1352	APPLCERT	2.00000	N 1276 E 168 S4SL 3S 1W 5	59
19590123	CRUMP, STANLEY R. AND ARLENE J.	IDS		59 1406	APPLNPR	0.01500	S 1560 E 90 N4SL 3S 1W27	59
19590804	RIVERTON CITY CORPORATION	C		59 1534	APPLCERT	5.00000	S 320 W 122 NESL 3S 1W31	59
19591105	GLENMOOR GOLF COURSE INC	I		59 4189	APPLCERT	1.39000	S 678 E 316 W4SL 3S 1W 7	59
19591105	GLENMOOR GOLF COURSE INC.	I		59 1521	APPLCERT	1.11000	S 10 E 254 W4SL 3S 1W 7	59
19591105	GLENMOOR GOLF COURSE INC.	I		59 1521	APPLCERT	1.11000	S 222 E 257 NWSL 3S 1W 7	59
19600428	BIGLER, LOUIS B.			59 1559	APPLDIS	1.00000	S 1320 W 1470 NESL 3S 1W 3	59
19600714	WEST JORDAN, CITY OF	C		59 1572	APPLAPP	1.00000	S 200 E 1500 NWSL 2S 1W35	59
19610327	SHULSEN, ERMA T.			59 1592	APPLDIS	0.10000	N 747 W 220 S4SL 2S 1W34	59
19610411	BOWLES, ARVID W. AND JOYCE G.	I		59 5359	APPLCERT	0.00000	S 1218 W 1417 N4SL 3S 2W35	59
19610511	BODELL, NOREEN S.	I S		59 1605	APPLCERT	1.80000	S 1213 E 350 N4SL 3S 2W35	59
19610521	AKITA, FRANK K.	I		59 1606	APPLCERT	2.71000	N 1240 W 1305 SE SL 3S 1W20	59
19610526	WALKER, GEORGE J.	I		59 1610	APPLCERT	1.56000	S 1105 W 710 N4SL 3S 2W35	59
19610529	ALLISON, CHARLES L. (JR.)	I		59 1611	APPLAPPD	2.00000	S 2616 E 1607 NWSL 3S 1W 5	59
19610605	FERAGEN, LEONARD H.	DS		59 1612	APPLCERT	0.01500	N 2202 E 193 S4SL 3S 1W29	59
19610605	SCHMIDT, JOSEPH J.	I		59 1613	APPLCERT	1.07000	N 110 E 41 W4SL 3S 1W 9	59
19610627	TATEOKA, MATT	I		59 1620	APPLCERT	3.49000	N 35 E 35 SWSL 3S 1W 9	59
19610711	KOGIANES, JOHN G.	I S		59 1623	APPLCERT	0.50000	S 1310 W 680 E4SL 2S 1W34	59
19610717	THORNE, RONALD H.	I		59 1627	APPLCERT	2.98000	S 810 W 1295 N4SL 3S 1W28	59
19610822	SPRATLING, JOHN	I		59 1636	APPLCERT	0.15500	N 181 E 33 S4SL 3S 1W 4	59
19610822	SPRATLING, JOHN	I		59 1637	APPLCERT	0.63400	N 2640 W 33 S4SL 3S 1W 9	59
19610830	BRADY, L. PEIRCE	I		59 1640	APPLUNAP	2.00000	N 200 E 10 S4SL 3S 1W29	59
19610908	ALVERSON, VERNELL			59 1643	APPLAPPD	0.10000	S 38 W 1447 E4SL 3S 1W 4	59
19611121	KENNECOTT UTAH COPPER CORPORATION	O		59 1653	APPLCERT	4.00000	S 2347 E 1149 NWSL 3S 2W14	59
19620305	DUTSON, BERNARD W.	IDS		59 1661	APPLCERT	0.01500	S 635 E 145 W4SL 3S 1W29	59
19620321	BRIGHT, CHARLES W.	IDS		59 1664	APPLCERT	0.00400	S 3410 W 202 N4SL 3S 1W29	59
19620327	JONES BROTHERS			59 1665	APPLAPPD	10.00000	N 100 SWSL 3S 2W10	59
19620426	DIMOND, STANLEY G.	I S		59 1671	APPLCERT	1.00000	N 1276 E 168 S4SL 3S 1W 5	59
19620619	GILBERT, DONALD R. & SUSAN J.	IDS		59 1031	APPLCERT	0.00200	S 3136 W 256 N4SL 3S 1W29	59
19620623	RIVERTON CITY	C		59 1118	APPLUNAP	2.00000	S 320 W 122 NESL 3S 1W31	59
19620918	MCCARTHY, CURTIS L. & CHARICE	IDS		59 3399	APPLCERT	0.01500	S 100 E 2430 W4SL 3S 1W29	59
19621213	KENNECOTT UTAH COPPER CORPORATION	O		59 3991	APPLWDD	7.00000	S 150 E 2500 NWSL 3S 2W14	59
19621213	KENNECOTT UTAH COPPER CORPORATION	O		59 1042	APPLCERT	4.44000	S 150 E 2500 NWSL 3S 2W14	59
19621213	KENNECOTT UTAH COPPER CORPORATION	O		59 3991	APPLWDD	7.00000	N 100 E 100 SWSL 3S 2W13	59
19630130	ALLISON, CHARLES L. (JR.)			59 1683	APPLAPPD	0.01500	S 2616 E 1657 NWSL 3S 1W 5	59
19630227	LDS CHURCH, CORPORATION OF THE PRESIDING BISHOP	I		59 1689	APPLUNAP	4.00000	S 55 W 1269 NESL 3S 1W20	59
19630301	BYTHEWAY, QUINTIN H.			59 1690	APPLAPPD	0.01500	S 166 E 2499 W4SL 2S 1W34	59
19630315	HARMAN, MAURICE M.	IDS		59 1693	APPLUNAP	4.00000	S 50 E 10 W4SL 3S 1W22	59
19630322	DEE'S INCORPORATED	I S		59 1694	APPLCERT	1.00000	S 530 W 2665 E4SL 3S 1W 5	59
19640213	WILLIAMSON, KENNETH HAROLD	I		59 1716	APPLUNAP	0.25000	N 300 W 779 E4SL 3S 1W21	59
19640228	DUTSON, BERNHARD W.			59 1719	APPLAPPD	0.01500	S 630 E 160 W4SL 3S 1W29	59
19640328	THOMPSON, MAX			59 1723	APPLCERT	0.05700	S 3308 E 130 N4SL 3S 1W29	59
19640805	CONDIE, VERNON ELDEAN	IDS		59 1731	APPLAPPD	0.01500	N 1425 E 1177 W4SL 3S 1W14	59
19641228	CONDIE, VERNON ELDEAN			59 1739	APPLAPPD	0.25000	N 1425 E 1177 W4SL 3S 1W14	59
19650316	PARRY, BLAINE B.			59 1744	APPLAPPD	0.01500	S 150 W 1420 N4SL 3S 1W29	59
19660211	BUTTERFIELD, WAYNE W.	IDS		59 3272	APPLUNAP	1.50000	N 50 E 850 SWSL 3S 2W35	59

19660713	PETERSON BROS.	IDS	59 3397	APPLUNAP	2.00000	S 1300 E 20 NWSL 3S 1W16	59
19660916	BUTTERFIELD, WAYNE W.	I	59 3404	APPLUNAP	0.50000	N 50 E 850 SWSL 3S 2W35	59
19670112	RUSHTON, DONALD	ID O	59 3417	APPLUNAP	3.00000	N 800 E 200 SWSL 3S 1W17	59
19680418	HUG, JON J.		59 3452	APPLAPD	0.01500	S 860 E 165 W4SL 3S 1W29	59
19680715	WELLS, D. DEAN	IDS	59 3565	APPLCERT	0.01500	N 265 E 805 S4SL 3S 1W17	59
19680930	BOWLES, ROBERT I.	I	59 1156	APPLCERT	0.61000	N 448 E 1397 W4SL 3S 2W35	59
19690229	GARDNER, DAVID I & GAYLE P.	ID	59 1551	APPLCERT	0.01500	S 921 W 226 N4SL 3S 1W 5	59
19690527	JESSEE, NORMAN P.	IDS	59 3597	APPLCERT	0.01500	N 204 W 420 SESL 3S 1W17	59
19690611	HOPES, ROBERT	IDS	59 3600	APPLCERT	0.04500	S 880 E 552 NWSL 3S 1W 4	59
19690831	HARMAN, MAURICE M. (ETAL)		59 1626	APPLAPD	4.00000	N 60 W 1260 S4SL 3S 1W 9	59
19691121	FREEMAN, ALONZO		59 1614	APPLAPD	3.00000	N 75 E 75 SWSL 3S 2W24	59
19700102	BURTON, MILLAN G.	I S	59 3608	APPLCERT	0.030	N 330 E 155 W4SL 2S 1W28	59
19700513	YARBERRY, AFTON L.	I S	59 3619	APPLAPD	0.01500	S 1160 W 835 N4SL 3S 1W16	59
19700603	PEINE, FRED	I S	59 3621	APPLAPD	0.01500	S 800 E 855 NWSL 3S 1W 4	59
19710221	TODD, MAURINE	IDS	59 3643	UGWC	0.015	S 2045 W 495 NESL 2S 1W29	59
19710226	GASSER, ROBERT	I S	59 3648	APPLCERT	0.01500	N 279 W 1690 E4SL 3S 1W10	59
19710503	BUNKER, RUSSELL M. AND NANETTE D.	IDS	59 3825	APPLAP	0.01500	N 418 W 1650 SESL 3S 2W33	59
19710625	SCHMIDT, HENRY F.		59 3811	APPLAPD	0.50000	N 1300 W 1000 S4SL 3S 1W 3	59
19710712	HALL, JACK W.		59 3814	APPLAPD	0.01500	N 200 W 766 NESL 4S 2W 4	59
19710712	ERICKSEN, KEITH A	IDS	59 3813	APPLCERT	0.01500	N 105 W 537 NESL 4S 2W 4	59
19710727	SIMPSON, ROBERT L.	IDS	59 3816	APPLCERT	0.01500	N 343 W 551 SESL 3S 2W33	59
19710803	RASMUSSEN, TRAVIS & BEA	IDS	59 3817	APPLCERT	0.01500	N 965 W 202 S4SL 3S 1W20	59
19711103	IVIE, JIM D. & WANDA	IDS	59 3826	APPLCERT	0.01500	N 263 E 1425 S4SL 3S 2W33	59
19720412	ANDREASON, WILLIAM K.	ID O	59 3839	APPLAPD	0.01500	N 100 W 100 SESL 3S 2W 8	59
19720419	TOLBERT, CLINTON BERNELL	IDS	59 3842	APPLAPD	0.50000	N 335 W 900 SESL 3S 2W12	59
19720424	FIFE, RICHARD A. AND NORMA D. (JR.)	IDS	59 3844	APPLAPD	0.06700	S 125 E 685 NWSL 3S 1W16	59
19720425	BRINKERHOFF, MORRIS H. AND BRENDA A.	IDS	59 3845	APPLCERT	0.01500	N 201 W 542 S4SL 3S 1W20	59
19720811	SCHOUTEN, SHERRILL J.	IDS	59 3869	APPLCERT	0.01500	S 340 E 790 NWSL 3S 1W29	59
19720823	OAKESON, GLEN W. & MOANA C.	IDS	59 3871	APPLCERT	0.01500	N 723 W 214 S4SL 3S 1W29	59
19721017	DANSIE, JESSE H.	ID	59 1249	APPLAP	6.37300	N 2300 E 1500 SWSL 3S 2W33	59
19721017	DANSIE, JESSE H.		59 4619	APPLAP	2.58000	S 1500 W 1450 NESL 3S 2W34	59
19721017	DANSIE, JESSE H.	ID	59 1249	APPLAP	6.37300	S 950 E 1050 E4SL 3S 2W33	59
19721017	DANSIE, JESSE H.		59 4619	APPLAP	2.58000	N 1900 E 2400 SWSL 3S 2W34	59
19721017	DANSIE, JESSE H.	ID	59 1249	APPLAP	6.37300	S 1500 E 1400 NWSL 3S 2W34	59
19721017	DANSIE, JESSE H.		59 4619	APPLAP	6.37300	S 50 E4SL 3S 2W33	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	S 950 E4SL 3S 2W33	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	N 2300 E 1500 SWSL 3S 2W33	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	N 1500 E 2000 SWSL 3S 2W33	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	N 1000 E 2300 SWSL 3S 2W34	59
19721017	DANSIE, JESSE H.		59 1249	APPLAP	6.37300	S 1250 E4SL 3S 2W33	59
19721017	DANSIE, JESSE H.		59 1249	APPLAP	6.37300	N 1500 E 2000 SWSL 3S 2W33	59
19721017	DANSIE, JESSE H.		59 1249	APPLAP	6.37300	S 1500 W 1450 NESL 3S 2W34	59
19721017	DANSIE, JESSE H.		59 1249	APPLAP	6.37300	S 2600 W 1450 NESL 3S 2W34	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	S 50 E4SL 3S 2W33	59
19721017	DANSIE, JESSE H.		59 1249	APPLAP	6.37300	N 1900 E 2400 SWSL 3S 2W34	59
19721017	DANSIE, JESSE H.	ID	59 1249	APPLAP	6.37300	S 950 E4SL 3S 2W33	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	S 1500 E 1400 NWSL 3S 2W34	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	S 950 E 1050 E4SL 3S 2W33	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	S 2600 W 1450 NESL 3S 2W34	59
19721017	DANSIE, JESSE H.		59 1249	APPLAP	6.37300	N 1000 E 2300 SWSL 3S 2W34	59
19721017	DANSIE, JESSE H.	ID	59 4619	APPLAP	2.58000	S 1250 E4SL 3S 2W33	59
19721031	HANSEN, PAUL L. AND ROXANNE S.	IDS	59 3885	APPLCERT	0.01500	N 70 W 875 SESL 3S 2W33	59
19730319	JORGENSEN, DAVID B.	IDS	59 3937	APPLAPD	0.01500	S 3220 W 3550 NESL 3S 1W20	59
19730404	CHIVERS, MELANIE	IDS	59 3940	APPLCERT	0.01500	N 1096 E 27 S4SL 3S 2W34	59
19730418	CANDALOT, GENE L.	ID	59 3941	APPLCERT	0.01500	S 173 W 1406 N4SL 3S 1W29	59
19730508	HOGGE, J. NORMAN	IDS	59 3950	APPLCERT	0.01500	N 493 E 1513 SWSL 3S 1W20	59
19730508	MIELKE, DWIGHT		59 3948	APPLAPD	0.01500	N 1315 E 130 S4SL 3S 1W20	59

19730514	HUNTSMAN, COURTNEY C. AND PATRICIA H.	I	59 3925	APPLCERT	0.10000 N 636 E 39 S4SL 2S 1W34	59
19730514	ROBERTS, FRANK C. AND JACQUELINE	I S	59 3926	APPLCERT	0.10000 N 636 E 39 S4SL 2S 1W34	59
19730514	STRATTON, FRANCES E. AND REED J.	I S	59 3949	APPLCERT	0.10000 N 636 E 39 S4SL 2S 1W34	59
19730530	COOK, GRANT O. (DR.)		59 3954	APPLCAPD	0.01500 S 3220 W 3550 NESL 3S 1W20	59
19730702	PETERS, FRANK		59 3977	APPLCAPD	0.01500 N 1785 E 1180 SWSL 3S 1W20	59
19730802	NAYLOR, LARRY C.	I S	59 3982	APPLCERT	0.01500 N 230 W 1190 S4SL 3S 1W20	59
19731030	NAYLOR, HENRY W.		59 3997	APPLCAPD	0.01500 N 1000 W 520 S4SL 2S 1W33	59
19740402	LARSEN, RONALD L.	IDS	59 4030	APPLCERT	0.01500 S 854 W 204 N4SL 3S 1W32	59
19740402	JOHNSON, CHESTER L.	IDS	59 4032	APPLCAPD	0.01500 N 278 E 786 SWSL 3S 1W20	59
19740402	JOHNSON, RANDY	IDS	59 4031	APPLCAPD	0.01500 N 278 E 786 SWSL 3S 1W20	59
19740418	GLENMOOR GOLF COURSE INC.	I	59 4483	APPLCERT	0.83000 S 678 E 316 W4SL 3S 1W 7	59
19740418	AFCO DEVELOPMENT CORPORATION	D	59 4035	APPLCAPD	5.17000 S 1450 N4SL 3S 1W 7	59
19740418	AFCO DEVELOPMENT CORPORATION	D	59 4035	APPLCAPD	5.17000 E 2500 W4SL 3S 1W 7	59
19740501	BLAND, BRIAN AND SHIRLEE	IDS	59 4041	APPLCERT	0.01500 S 247 W 785 N4SL 3S 1W32	59
19740524	TIDWELL, BERT ALLEN	IDS	59 4054	APPLCERT	0.01500 N 875 E 1089 SWSL 3S 1W20	59
19740530	PHELPS, STEVEN D. & VICKI LIN	IDS	59 4055	APPLCERT	0.01500 S 1235 W 156 N4SL 3S 1W29	59
19740627	ABEYTA, CANDIDA F. AND LOUISA	IDS	59 4063	APPLCAPD	0.04500 S 100 E 967 NWSL 3S 1W 4	59
19740708	ERNEST, ROBERT AND BARBARA	IDS	59 4069	APPLCAPD	0.01500 N 720 W 350 SESL 3S 2W34	59
19740718	DANSIE, ARTHUR H.	IDS	59 4073	APPLCERT	0.01500 N 1096 E 27 S4SL 3S 2W34	59
19740723	BRINGHURST, J. OWEN AND KAREN	IDS	59 4076	APPLCERT	0.01500 N 1127 W 264 S4SL 3S 1W20	59
19740815	RICE, KENNETH F. (JR.)	IDS	59 4079	APPLCERT	0.01500 N 292 E 760 SWSL 3S 1W20	59
19741007	ROBERTSON, DOUGLAS AND BETH	IDS	59 4091	APPLCAPD	0.01500 S 1262 W 190 N4SL 3S 1W29	59
19741029	ANDREGG, ANNA	IDS	59 4097	APPLCAPD	0.04500 S 700 E 1580 NWSL 3S 1W16	59
19741107	DAUSE, BILL	D	59 4100	APPLCAPD	0.01500 S 100 E 525 NWSL 4S 2W 2	59
19750130	BASTIAN, E. P.	IDS	59 4118	APPLCERT	0.01500 S 3286 W 2213 NESL 3S 2W32	59
19750306	WALKER, JOHN	I S	59 4123	APPLCERT	0.03200 N 1507 W 233 SESL 2S 1W27	59
19750325	PEASE, CECIL AND WILMA	IDS	59 4127	APPLCERT	0.01500 N 1435 E 1190 W4SL 3S 1W14	59
19750521	HAM, BILLY W. AND GRACE	IDS	59 4143	APPLCERT	0.01500 S 230 E 355 N4SL 3S 1W20	59
19750609	BATEMAN, DEON R.	IDS	59 4147	APPLCERT	0.01500 S 332 W 699 N4SL 3S 1W30	59
19750616	HOWELL, KEVAN	IDS	59 4148	APPLCERT	0.01500 S 332 W 669 N4SL 3S 1W30	59
19750924	BENNETT, BRENT	IDS	59 4192	APPLCERT	0.01500 N 438 W 145 S4SL 3S 1W29	59
19760408	FLETCHER, JOSEPH L. AND CAROLYN F.	IDS	59 4226	APPLCERT	0.01500 N 507 W 180 S4SL 3S 1W29	59
19760415	EGBERT, KEITH	IDS	59 4229	APPLCERT	0.01500 S 155 E 795 N4SL 3S 1W32	59
19760622	SCIUTO, STEVEN	IDS	59 4244	APPLCERT	0.01500 N 1809 E 1021 S4SL 3S 1W29	59
19760716	ALLEN, JAMES T. & KATHY E.	IDS	59 4255	APPLCERT	0.01500 S 125 W 163 NESL 3S 1W31	59
19760719	PULLEY, HARVEY	IDS	59 4259	APPLCERT	0.04300 N 251 W 1127 E4SL 3S 1W 5	59
19760719	PULLEY, HARVEY	I	59 5311	APPLCAPD	0.05700 N 200 W 1100 E4SL 3S 1W 5	59
19760722	MACKAY, KEITH P.		59 4260	APPLCAPD	0.01500 N 870 E 420 S4SL 3S 2W33	59
19760723	MARTIN, MARK K.	IDS	59 4304	APPLCERT	0.01500 N 325 W 130 S4SL 3S 1W29	59
19760819	DAINES, VAUGHN R.	IDS	59 4312	APPLCERT	0.01500 N 903 E 1609 S4SL 3S 1W29	59
19760920	BENTON, JAMES O.	IDS	59 4321	APPLCERT	0.01500 S 180 E 1292 N4SL 3S 1W32	59
19761004	HAL K. LARSEN AND SONS CONSTRUCTION INC.	IDS	59 4323	APPLCERT	0.01500 S 180 W 967 N4SL 3S 1W32	59
19761014	PETERSEN, CRAIG	IDS	59 4325	APPLCERT	0.01500 S 635 E 177 NWSL 3S 1W29	59
19761019	JONES, OTTO F.	I S	59 4326	APPLCERT	0.06000 N 521 E 14 W4SL 3S 1W16	59
19761115	AMES, STEPHEN L.	IDS	59 4333	APPLCERT	0.02500 N 706 E 1413 W4SL 3S 1W16	59
19761116	HARDMAN, DAVID NORD	ID	59 4005	APPLCAPD	0.01500 N 329 W 220 S4SL 3S 1W20	59
19761123	RASMUSSEN, BRENT K.	IDS	59 4338	APPLCERT	0.01500 N 394 W 1980 E4SL 3S 1W27	59
19770103	PERSCHON, A. ROBERT	IDS	59 4346	APPLCERT	0.02200 N 503 E 2361 W4SL 3S 1W10	59
19770127	MOOSMAN, GLEN	I	59 4404	APPLCERT	0.10000 N 1048 W 143 E4SL 3S 1W 4	59
19770215	HARPER, FRANCIS M.	IDS	59 4414	APPLCERT	0.01500 N 1893 E 642 S4SL 3S 1W29	59
19770216	REID, JOHN A.	I S	59 4417	APPLCERT	0.02500 S 1137 E 163 W4SL 3S 1W11	59
19770216	ANDERSON, MAX W.	I S	59 4418	APPLCERT	0.23300 S 1137 E 163 W4SL 3S 1W11	59
19770222	ELLEFSSEN, CLARENCE W. (FAMILY TRUST)	I	59 4433	APPLCERT	0.03000 N 288 E 47 SWSL 3S 1W11	59
19770301	POTOMAC CORPORATION	ID O	59 4436	APPLCERT	0.22000 S 180 W 664 NESL 2S 1W34	59
19770304	BATEMAN, GLENN W.	ID	59 4438	APPLCERT	0.01500 N 1020 E 429 W4SL 3S 1W16	59
19770324	NIELSEN, LARRY M.		59 4451	APPLCAPD	0.06700 N 810 W 400 SESL 3S 1W 8	59
19770418	JESSEE, NORMAN P.	I	59 4459	APPLCERT	0.01400 N 204 W 420 SESL 3S 1W17	59

19770422	FAILOR, KENNETH L.	IDS	59 4462	APPLCERT	0.01500 N 161 E 1030 S4SL 3S 1W29	59
19770503	OLSEN, CECIL A.	ID	59 4471	APPLCERT	0.01500 N 1541 E 489 S4SL 3S 1W29	59
19770504	BARLOW, LYMAN J.	IS	59 4472	APPLCERT	0.01500 N 1501 E 49 S4SL 3S 1W29	59
19770509	JESSEE, NORMAN	I	59 4476	APPLCERT	0.01500 S 164 W 312 NESL 3S 1W22	59
19770510	TURNER, LARRY J.	ID	59 4477	APPLCERT	0.01500 N 764 W 80 SESL 3S 2W33	59
19770601	BECKSTEAD, STERLING M.	ID	59 4495	APPLCERT	0.09000 N 1048 E 179 SWSL 3S 1W14	59
19770614	KYRIOPOULOS, LOUISE	I	59 4503	APPLCERT	0.03500 S 1230 W 2065 E4SL 2S 1W33	59
19770707	ALLDREDGE, CLIFFORD L.	IS	59 4525	APPLCERT	0.04500 N 2613 E 2910 SWSL 3S 1W14	59
19770719	GYGI, WALLACE NEIL	IDS	59 4537	APPLCERT	0.02200 N 1183 E 204 SWSL 3S 1W11	59
19770719	IWAMOTO, TAKEO	ID O	59 4536	APPLCERT	0.01500 S 110 W 460 N4SL 3S 1W10	59
19770719	FARNSWORTH, RONALD DALE	ID	59 4538	APPLCERT	0.01500 S 615 E 1235 N4SL 3S 1W15	59
19770810	KIMBER, IRVIN GERALD	I	59 4559	APPLCERT	0.01500 S 304 E 751 W4SL 3S 1W14	59
19770930	DANSIE, A. BRENT AND ALYCE ANN	IDS O	59 5571	APPLAPP	0.00000 N 900 E 100 S4SL 3S 2W34	59
19770930	DANSIE, A. BRENT AND ALYCE ANN	IDS O	59 5571	APPLAPP	0.00000 N 1096 E 27 S4SL 3S 2W34	59
19771003	BUTTERFIELD, ELDON	IDS O	59 3895	APPLAPP	0.01500 S 90 W 980 NESL 3S 1W30	59
19780128	GRAHAM, SHIRLENE	IDS	59 3986	APPLAPP	0.01500 N 1500 E 1150 SWSL 3S 1W20	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 S 1250 E4SL 3S 2W33	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 N 1000 E 2300 SWSL 3S 2W34	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 N 2300 E 1500 SWSL 3S 2W33	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 S 1500 W 1450 NESL 3S 2W34	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 N 1900 E 2400 SWSL 3S 2W34	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 S 950 E 1050 E4SL 3S 2W33	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 N 1500 E 2000 SWSL 3S 2W33	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 S 2600 W 1450 NESL 3S 2W34	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 S 950 E4SL 3S 2W33	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 S 1500 E 1400 NWSL 3S 2W34	59
19780306	DANSIE, JESSE H.	ID	59 4619	APPLWD	2.58000 S 50 E4SL 3S 2W33	59
19780313	OPP, BARBARA K.	ID	59 4622	APPLAPP	0.05600 N 200 E 1040 S4SL 3S 1W17	59
19780322	DEASON, HENRY H AND MAYE W	IDS	59 4624	APPLCERT	0.01500 S 1910 W 600 N4SL 3S 1W 5	59
19780424	SULLIVAN, DOUGLAS AND ILEAN	IDS	59 4636	APPLCERT	0.01500 N 1155 E 1390 SWSL 3S 1W22	59
19780523	ALT, RAYMOND (JR.)	IDS	59 4643	APPLAPP	0.01500 N 200 E 920 SWSL 3S 1W20	59
19780524	KENWORTHY, EARL & BETTY	I	59 4644	APPLCERT	0.20000 N 1260 W 795 SESL 3S 1W 8	59
19780919	DICK, JAMES	I	59 4674	APPLCERT	0.22300 N 606 E 560 SWSL 2S 1W35	59
19781204	OWEN, LAVAWN R.	I	59 4107	APPLAPP	0.20000 N 100 W 1200 SESL 3S 1W 8	59
19781205	HANSEN, KEVIN & CAROL	IDS	59 4684	APPLCERT	0.01500 N 65 W 777 SESL 3S 1W 9	59
19790423	DUTSON, LYMAN W.	IDS	59 4717	APPLCERT	0.01500 S 9 E 53 W4SL 3S 1W29	59
19790508	WARREN, DEAN T.	IS	59 4723	APPLCERT	0.02100 S 772 W 284 NESL 3S 1W 3	59
19790615	DAVIS, F. VAL	I	59 4729	APPLCERT	0.01500 S 270 E 133 W4SL 3S 1W14	59
19790801	NIELSEN, THOMAS J.	I	59 4741	APPLCERT	0.01500 S 1014 W 1937 E4SL 3S 1W21	59
19790801	NIELSEN, T. JOHN (II)	ID	59 4742	APPLCERT	0.01500 S 1014 W 1937 E4SL 3S 1W21	59
19790823	KOCH, ROBERT	ID	59 4744	APPLCERT	0.01500 N 127 E 1473 SWSL 3S 1W 2	59
19790921	BARLOW, JESSE M.	ID	59 4749	APPLCERT	0.01500 N 1184 E 2086 W4SL 3S 1W 4	59
19791023	RICHARDSON, DUANE G.	IDS	59 4753	APPLCERT	0.01500 S 825 E 155 N4SL 3S 1W 2	59
19791101	SMITH, ALVIN R. AND SANDRA H.	IDS	59 3902	APPLAPP	0.01500 N 2200 E 1400 SWSL 3S 1W20	59
19791116	BOWLES, WILLIAM C. AND KHYVA J.	IDS	59 4309	APPLCERT	0.01400 N 185 E 1100 SWSL 3S 1W20	59
19800314	FRAUGHTON, EDWARD J.	I	59 5529	APPLAPP	0.00000 S 1100 E 150 NWSL 3S 1W14	59
19800314	FRAUGHTON, EDWARD J.	IDS	59 4250	APPLCERT	0.16300 N 1600 E 170 W4SL 3S 1W14	59
19800318	JONES, OTTO F.	IS	59 4768	APPLCERT	0.14000 N 531 E 14 W4SL 3S 1W16	59
19800624	PETTEGREW, DONALD E. AND MERLE J. WARDLE	IDS	57 8537	APPLAPP	0.01500 N 410 W 1720 E4SL 3S 1W27	57
19800801	BUTTERFIELD, CRAIG E.	IDS	59 4386	APPLCERT	0.01500 S 75 W 237 E4SL 3S 1W30	59
19800818	HADLEY, MARIE	ID	59 4390	APPLCERT	0.01500 N 646 W 771 SESL 3S 1W 9	59
19801004	CHRISTOFFERSON, JOHN B. AND CHERI	IDS	59 4776	APPLAPP	0.01500 N 230 E 390 S4SL 3S 2W34	59
19801008	RASMUSSEN, KENNETH P. & ELSIE S.	IDS	59 4771	APPLCERT	0.01500 N 327 W 223 S4SL 3S 1W20	59
19801203	BLAND BROTHERS INCORPORATED	ID	59 4783	APPLCERT	0.06500 S 160 W 638 N4SL 3S 1W 3	59
19810122	SEEGRIST, ROGER	D	59 4788	APPLAPP	0.01500 N 920 E 790 W4SL 3S 1W11	59
19810210	LUCAS, FRED	IDS	57 8567	APPLAPP	0.01500 S 950 W 1650 NESL 3S 1W20	57
19810220	BEERS, KENNETH D.	ID O	59 4805	APPLCERT	0.06700 N 66 E 592 SWSL 2S 1W26	59

19810302	ANDERSON, NORMAN K.	I	59 4801	APPLAPD	0.01500 S	335 W 2145 E4SL 3S	1W16	59
19810318	DANSIE, TOM	IDS	59 4807	APPLAPD	0.01500 N	350 W 1850 SESL 3S	2W34	59
19810617	TISCHNER, PAUL R.	IDS	59 4825	APPLAPD	0.01500 N	1030 W 2310 E4SL 3S	1W16	59
19810714	BUTCHER, WANEMA C.	IDS	59 4830	APPLAPD	0.01500 S	45 W 490 E4SL 3S	1W16	59
19810721	SOUTHWIRE COMPANY	I O	59 4831	APPLAPD	1.00000 S	720 W 674 NESL 3S	1W 5	59
19810728	SCHMIDT, DARLENE (C/O MABLE JENKINS)	IDS	59 4833	APPLAPD	0.03000 S	800 E 960 W4SL 3S	1W 3	59
19810804	WALKER, E. R.	IDS	59 4837	APPLAPD	0.01500 N	340 E 1350 W4SL 3S	1W11	59
19810813	LARSEN, GERALD	ID	59 4838	APPLAPD	0.01500 S	180 W 967 N4SL 3S	1W32	59
19810824	THOMETZ, LOEL	ID	59 4845	APPLAPD	0.01500 N	600 W 1610 E4SL 3S	1W16	59
19810824	NUZMAN, LESTER J.	I S	59 4842	APPLCERT	0.07000 N	404 E 165 SWSL 3S	1W 2	59
19810901	STALLINGS, REX	IDS	59 4847	APPLAPD	0.01500 S	130 W 1550 E4SL 3S	1W22	59
19810902	STALLINGS, DON	IDS	59 4848	APPLCERT	0.01500 S	175 W 1475 E4SL 3S	1W22	59
19811102	HILL, ALLEN F.	IDS	59 4858	APPLAPD	0.03000 N	805 E 1239 W4SL 3S	1W14	59
19811117	VANSLEEUEWEN, PAUL R. & JOLEN	IDS	59 4863	APPLAPD	0.01500 S	450 W 1700 E4SL 3S	2W34	59
19811230	HANSEN, GREG	ID	59 4869	APPLAPD	0.01500 S	1150 E 1220 N4SL 3S	1W 3	59
19820112	VANSLEEUEWEN, CON AND HENNIE	ID	59 4871	APPLAPD	0.01500 S	450 W 1700 E4SL 3S	2W34	59
19820219	HOLBROOK, VENILE	IDS	59 4873	APPLCERT	0.01500 S	1690 W 460 NESL 3S	1W28	59
19820330	VANSLEEUEWEN, RONALD & JANET	IDS	59 4877	APPLAPD	0.01500 S	450 W 1700 E4SL 3S	2W34	59
19820601	HANSEN, CHARLES G.	IDS	59 4894	APPLAPD	0.01500 S	920 W 1060 NESL 3S	1W27	59
19820728	SCHOUTEN, LARRY J.	ID	59 4901	APPLCERT	0.01500 N	765 E 2482 W4SL 3S	1W29	59
19820902	RUSHTON, CLINTON V. & JOAN R.	IDS	59 4908	APPLCERT	0.01500 S	205 E 218 W4SL 3S	1W14	59
19821007	PEASE, JANICE	IDS	59 4912	APPLAPD	0.04500 S	1120 E 870 NWSL 3S	1W14	59
19821109	DEGRAW, DAVID L.	I	59 4917	APPLAP	0.04500 S	235 E 460 W4SL 3S	1W14	59
19830210	IVIE, JIM DEE	IDS	59 4924	APPLAPP	0.01500 N	263 E 1425 S4SL 3S	2W33	59
19830210	IVIE, JIM DEE	IDS	59 4925	APPLAPP	0.01500 N	300 W 900 SESL 3S	2W33	59
19830228	DANSIE, KENT ALMA	IDS	59 4928	APPLAP	0.01500 N	300 W 950 SESL 3S	2W34	59
19830330	MCALLISTER, LYLE D.	IDS	59 4941	APPLAPD	0.04000 S	750 W 850 N4SL 3S	1W16	59
19830330	MCALLISTER, LYLE D.	IDS	59 4941	APPLAPD	0.04000 S	200 W 850 N4SL 3S	1W16	59
19830331	SAVAGE, EARL & CHRISTINE	IDS	59 4935	APPLAPD	0.01500 S	345 E 420 NWSL 4S	2W 2	59
19830426	MCQUEEN, NELSON L.	IDS	59 4940	APPLCERT	0.01500 S	230 W 1255 N4SL 3S	1W28	59
19830504	HANSEN, GREGORY L.	ID	59 4942	APPLAP	0.01500 N	400 E 600 W4SL 3S	1W 2	59
19830525	HANSEN, PAUL LEROY	IDS	59 4946	APPLAPD	0.01500 N	100 W 1100 SESL 3S	2W33	59
19830526	BALVIN, SUSAN D.	IDS	59 4947	APPLAPD	0.05000 N	1300 E 1200 SWSL 3S	1W 5	59
19830527	JENSEN, DONALD D. & JANE R.	IDS	59 4948	APPLCERT	0.02000 S	26 W 1124 NESL 3S	1W16	59
19830802	BOWMAN III, HAROLD I.	I O	59 4957	APPLAPD	0.05000 S	1420 E 810 N4SL 3S	1W27	59
19830805	KARTCHNER, EARL	IDS	59 4962	APPLAP	0.01500 N	1050 E 1500 SWSL 3S	1W22	59
19830810	HILBERT, DEMA & GARY	IDS	59 4964	APPLAPD	0.01500 S	120 E 1170 W4SL 3S	1W29	59
19830927	CALLISTER REAL ESTATE AND INVESTMENT CORPORATION	IDS	59 4970	APPLAPD	0.01500 N	184 E 1100 SWSL 3S	1W20	59
19830927	CALLISTER REAL ESTATE AND INVESTMENT CORPORATION	IDS	59 4971	TEMPEXP	0.01500 N	184 E 1100 SWSL 3S	1W20	59
19831019	JU, DAVID	IDS	59 4974	APPLAPD	0.01500 S	130 E 100 NWSL 4S	2W 2	59
19840206	SORENSEN, RUSSELL	IDS	59 4982	APPLCERT	0.01500 S	1005 E 1860 NWSL 3S	1W26	59
19840309	SOUTH VALLEY WATER RECLAMATION FACILITY	IDS	59 4330	APPLWDD	0.00000 N	1840 W 166 E4SL 3S	2W21	59
19840504	RICE, KENNETH F. (JR.) & DIANA M.	I	59 5001	APPLAPD	0.01500 N	300 E 720 SWSL 3S	1W20	59
19840507	ROWE, GLENN N. & MELODY A.	IDS	59 5000	APPLCERT	0.01500 S	340 W 1226 NESL 3S	1W16	59
19840507	ORME, GILBERT	IDS	59 5047	APPLAPD	0.01500 N	1050 E 1500 SWSL 3S	1W22	59
19840606	BAKER, JOHN R.	IDS	59 5052	APPLAPD	0.01500 S	200 W 1090 N4SL 3S	1W28	59
19840702	PONT, DONALD E	I	59 5054	APPLCERT	0.01000 N	1084 E 186 SWSL 3S	1W14	59
19840726	MADSEN, ORVILLE	I S O	59 5059	APPLAPD	0.01500 S	100 W 1000 NESL 3S	1W32	59
19841016	YATES, J. MAC AND GLORIA RUTH	I S	59 5059	APPLCERT	0.06700 N	962 W 584 SESL 3S	1W 9	59
19841016	MASCARO, BOB	D	59 5068	APPLUNAP	0.20000 S	820 E 800 NWSL 3S	1W 8	59
19841114	GILES, LEE A. AND KATHY	IDS	59 5070	APPLAPD	0.01500 S	250 E 2440 W4SL 3S	1W29	59
19850306	GORDON, DAL & REATHA	IDS	59 5085	APPLCERT	0.01500 N	345 W 550 SESL 3S	2W33	59
19850306	HOLMAN, BOBBY JOE	IDS	59 5084	APPLAPD	0.01500 N	343 W 551 SESL 3S	2W33	59
19850326	SCHOUEDEL, JAMES E. AND SANDRA	IDS	59 5089	APPLAPD	0.01500 N	343 W 551 SESL 3S	2W33	59
19850506	WHELEWRIGHT, DAVID A. AND MAVIS G.	I	59 5101	APPLAPD	0.05400 N	65 W 777 SESL 3S	1W 9	59
19850520	PRICE, JOHN L.	IDS	59 4813	APPLAPD	0.13300 S	1260 E 200 N4SL 3S	1W 4	59
19850604	HATT, THIEL F.	I	59 5105	APPLAPD	0.02200 S	550 W 420 N4SL 3S	1W14	59

19850614	SOUTH VALLEY WATER RECLAMATION FACILITY	O	59 5108	APPLCERT	0.01500	N	100 W	2100 SESL	3S	2W21	59
19850619	SPIERS, LORRAINE T. AND GARTH	IDS	59 5122	APPLAPP	0.01500	S	80 E	855 W4SL	3S	1W29	59
19850619	EKINS, RONALD W.	I	59 4963	APPLAPP	0.01500	S	80 E	590 W4SL	3S	1W29	59
19850626	SCHMIDT, HENRY F.	I	59 5126	APPLAPP	0.75000	N	2640 W	1100 S4SL	3S	1W 3	59
19850705	CLARK, NEAL	I	59 5130	APPLAPP	0.02500	N	1850 E	150 SWSL	3S	1W14	59
19850709	JONES, JOANE	IDS	59 4596	APPLAPP	0.07800	S	100 E	180 NWSL	3S	1W16	59
19850808	KARTCHNER, EARL	IDS	59 5133	APPLAPP	0.01500	N	2500 E	150 S4SL	3S	1W29	59
19850821	BELCHAK TRUSTEES, THOMAS A. & CHRISTINE J.	IDS	59 5138	APPLAPP	0.10000	N	550 E	800 SWSL	3S	1W 7	59
19850911	HOOGVELDT, MARTIN M.	IDS	59 5140	APPLAPP	0.01500	N	2460 E	60 S4SL	3S	1W29	59
19851210	SOUTH JORDAN, CITY OF	C	59 5152	APPLUNAP	3.50000	N	1540 W	640 SESL	3S	1W10	59
19851210	SOUTH JORDAN, CITY OF	C	59 5152	APPLUNAP	3.50000	S	400 W	50 E4SL	3S	1W10	59
19851210	SOUTH JORDAN, CITY OF	C	59 5152	APPLUNAP	3.50000	N	1540 E	920 S4SL	3S	1W10	59
19860411	SOUTH JORDAN CITY	C	59 5171	APPLUNAP	3.00000	N	200 E	2800 SWSL	3S	2W24	59
19860411	SOUTH JORDAN CITY	C	59 5169	APPLUNAP	3.00000	S	200 E	200 NWSL	3S	1W10	59
19860411	SOUTH JORDAN CITY	C	59 5170	APPLUNAP	3.00000	N	200 W	2400 SESL	3S	2W23	59
19860429	VANSLEEUEWEN, CON	C	59 5173	APPLAPP	2.00000	S	450 W	1700 E4SL	3S	2W34	59
19860611	SALT LAKE COUNTY	ID	59 5179	APPLAPP	2.00000	S	970 W	1265 NESL	3S	1W 4	59
19860701	DOXEY, SCOTT T.	IDS	59 5185	APPLCERT	0.01500	S	1300 W	730 N4SL	3S	1W 8	59
19860703	GAILEY, SHARON	ID	59 4903	APPLAPP	0.01500	S	350 W	485 NESL	3S	1W16	59
19860812	PUZUY, NAD	IDS	59 4786	APPLAPP	0.01500	S	700 E	2200 NWSL	3S	1W26	59
19860820	HAMILTON, RALPH	IDS	59 5204	APPLCERT	0.01500	S	335 E	105 NWSL	4S	2W 2	59
19860917	ANDERSON, DAVIS N.	IDS	59 5206	APPLCERT	0.01500	N	625 W	175 S4SL	3S	1W29	59
19861201	KENNECOTT UTAH COPPER CORPORATION	IDS	59 5209	APPLCERT	1.04000	S	694 E	1256 NWSL	3S	2W27	59
19870116	BURRUP, RONALD L.	O	59 5215	APPLCERT	0.05000	S	389 W	1049 NESL	3S	1W16	59
19870325	ALLEN, R. THAD	ID	59 5217	APPLAPP	0.01500	N	610 E	965 W4SL	3S	1W11	59
19870409	THOMPSON, SHONNA F.	ID	59 5219	APPLAPP	0.01500	N	40 W	1905 E4SL	3S	1W27	59
19870529	PEINE, FRED	IDS	59 5228	APPLUNAP	0.05000	S	800 E	855 NWSL	3S	1W 4	59
19870612	WILEY, ROBERT G.	IDS	59 5229	APPLCERT	0.01500	N	117 W	286 SESL	3S	1W 9	59
19870803	MITCHELL, ARTHUR O. AND LEVARA	ID	59 5233	APPLCERT	0.01300	N	1720 W	217 SESL	3S	2W34	59
19870903	BOOTH BRENT T. & KAREN N.	IS	59 5240	APPLCERT	0.01500	N	1972 W	1219 SESL	3S	1W29	59
19870923	WALKER, LYNN	I	59 5244	APPLCERT	0.01500	N	721 E	419 W4SL	3S	1W 8	59
19871103	MECHAM, LOUIS F.	I	59 5246	APPLAPP	0.01500	S	240 E	750 NWSL	4S	2W 3	59
19880122	BELCHAK, THOMAS A.	IDS	59 5251	APPLAPP	0.01500	N	550 E	950 SWSL	3S	1W 7	59
19880304	BOWLES, ROBERT I.	IDS	59 5251	APPLAPP	1.16000	S	300 E	710 NWSL	3S	2W35	59
19880513	EGBERT, SUSAN	I	59 4751	APPLAPP	0.00000	N	521 E	14 W4SL	3S	1W16	59
19880809	WILCOX, LORETTA	I	59 13	APPLWD	0.01500	S	1471 W	151 NESL	3S	1W30	59
19890525	HANSEN, KEVIN	IDS	59 5074	APPLCERT	0.04000	N	65 W	777 SESL	3S	1W 9	59
19890619	VANLEUVEN, E. WAYNE & LUCRECIA C.	I	59 5096	APPLCERT	0.05400	N	65 W	777 SESL	3S	1W 9	59
19890621	SCHMIDT TRUST, HENRY F.	I	59 5102	APPLAPP	0.14900	N	2640 W	1100 S4SL	3S	1W 3	59
19890622	BUTTERFIELD, CINDY B.	I	59 5312	APPLREJ	0.01500	S	200 W	60 N4SL	3S	1W30	59
19890915	KENNECOTT UTAH COPPER CORPORATION	IDS	59 5091	APPLAPP	0.01500	S	2664 E	683 NWSL	3S	2W17	59
19890915	KENNECOTT UTAH COPPER CORPORATION	IDS	59 945	APPLAPP	0.89000	S	2700 E	690 NWSL	3S	2W17	59
19900608	KENNECOTT UTAH COPPER CORPORATION	IDS	59 945	APPLAPP	0.04500	N	1050 W	2500 E4SL	3S	1W 4	59
19900621	MOOSMAN, GLEN	D	59 4953	APPLAPP	0.01500	S	80 E	590 W4SL	3S	1W29	59
19900621	EKINS, RONALD W.	IDS	59 4963	APPLAPP	0.01500	S	350 W	485 NESL	3S	1W16	59
19900717	JONES, HAL H.	ID	59 5296	APPLAPP	0.01500	N	810 W	300 SESL	3S	1W 8	59
19900821	SPOERRI, AUGUST F.	ID	59 5305	APPLAPP	0.01500	N	758 E	1350 W4SL	3S	2W33	59
19901109	FOOTHILL WATER COMPANY	IDS	59 1608	APPLAPP	0.50000	N	335 W	900 SESL	3S	2W12	59
19901203	TOLBERT, CLINTON BERNELL AND CONNIE (TRUST)	IDS	59 5315	APPLREJ	0.50000	N	335 W	900 SESL	3S	2W12	59
19901203	TOLBERT, CLINTON BERNELL AND CONNIE (TRUST)	IDS	59 5316	FIXDAPP	0.01500	N	1110 E	655 S4SL	3S	2W33	59
19910416	WITHERSPOON, JAMES R.	IDS	59 5324	APPLAPP	0.01500	N	450 W	450 E4SL	3S	1W28	59
19910501	BRADLEY, JAN	I	59 5248	APPLAPP	0.01500	S	660 W	1900 E4SL	3S	2W34	59
19911008	STROH, KIMBERLY S.	IDS	59 5333	FIXDLAP	0.50000	S	758 E	1350 W4SL	3S	2W33	59
19911217	FOOTHILL WATER COMPANY	IDS	59 1608	APPLAPP	0.10000	N	550 E	800 SWSL	3S	1W 7	59
19920205	BELCHAK, THOMAS A. AND CHRISTINE J.	IDS	59 5138	APPLAPP	0.89000	S	2664 E	638 NWSL	3S	2W17	59
19920402	KENNECOTT UTAH COPPER CORPORATION	IDS	59 945	APPLAPP	0.89000	S	2700 E	690 NWSL	3S	2W17	59
19920402	KENNECOTT UTAH COPPER CORPORATION	IDS	59 945	APPLAPP	2.00000	S	970 W	1265 NESL	3S	1W 4	59
19920415	SALT LAKE COUNTY	I	59 5179	APPLAPP							59

19920825	GORDON, SCOTT	IDS	59 5364	FIXDLAP	0.00000	N	30 W	400	SESL	3S	2W33	59
19920914	FOOTHILLS WATER COMPANY	IDS	59 3879	APPLXP	0.00000	S	740 E	1330	W4SL	3S	2W33	59
19921015	FITZGERALD, DENNIS	IDS	59 5374	FIXDAPP	0.01500	N	345 W	550	SESL	3S	2W33	59
19921217	SCHMIDT, HENRY F.	I	59 4258	APPLAPP	0.25000	N	875 W	460	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F. (TRUST)		59 4258	APPLAPP	0.25000	N	865 W	455	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F. (TRUST)		59 4258	APPLAPP	0.25000	N	875 W	460	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F. (TRUST)		59 4258	APPLAPP	0.25000	N	875 W	470	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F.	I	59 4258	APPLAPP	0.25000	N	870 W	455	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F.	I	59 4258	APPLAPP	0.25000	N	2640 W	1100	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F.	I	59 4258	APPLAPP	0.25000	N	875 W	470	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F. (TRUST)	I	59 4258	APPLAPP	0.25000	N	865 W	460	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F.	I	59 4258	APPLAPP	0.25000	N	865 W	455	S4SL	3S	1W 3	59
19921217	SCHMIDT, HENRY F.	I	59 4258	APPLAPP	0.25000	N	865 W	460	S4SL	3S	1W 3	59
19930104	DANSIE, RICHARD PAUL	IDS	59 5383	FIXDAPP	0.00000	N	1300 W	100	S4SL	3S	2W34	59
19930412	LEE, KEVIN M.	IDS	59 5390	FIXDAPP	0.01500	N	345 W	550	SESL	3S	2W33	59
19930430	TRUJILLO FAMILY TRUST	S	59 5394	APPLAPP	0.01500	S	30 W	520	NESL	3S	1W10	59
19940119	KENNECOTT UTAH COPPER CORPORATION		59 945	APPLXP	0.89000	S	2700 E	690	NWSL	3S	2W17	59
19940119	KENNECOTT UTAH COPPER CORPORATION		59 945	APPLXP	0.89000	S	2664 E	683	NWSL	3S	2W17	59
19940217	HERRIMAN PIPELINE AND DEVELOPMENT COMPANY		59 5258	APPLAPP	1.00000	N	1711 W	1316	SESL	3S	2W34	59
19940217	HERRIMAN PIPELINE AND DEVELOPMENT COMPANY		59 5258	APPLAPP	1.00000	N	2020 W	100	SESL	3S	2W34	59
19940302	SALT LAKE COUNTY	I	59 5425	APPLAPP	2.00000	S	1195 W	1280	NESL	3S	1W 4	59
19940302	SALT LAKE COUNTY	I	59 5425	APPLAPP	2.00000	S	970 W	1265	NESL	3S	1W 4	59
19940511	DE LIA, JULIAN E.	IDS	59 5440	FIXDLAP	0.01500	N	418 W	1650	SESL	3S	2W33	59
19950103	RIVERTON CITY	C	59 1533	APPLAPP	5.00000	N	113 W	786	NESL	3S	1W32	59
19950126	KENNECOTT UTAH COPPER CORPORATION		59 945	APPLXP	2.00000	S	100 E	250	NWSL	3S	2W27	59
19950126	KENNECOTT UTAH COPPER CORPORATION		59 3	APPLXP	2.00000	S	3700 E	4250	NWSL	3S	2W16	59
19950731	IWAMOTO, TAKEO	I O	59 4544	APPLWD	0.02200	S	110 W	460	N4SL	3S	1W10	59
19950811	KENNECOTT UTAH COPPER CORPORATION		59 3	APPLAPP	3.00000	S	115 W	2634	NESL	3S	2W27	59
19960226	KENNECOTT UTAH COPPER CORPORATION		59 945	APPLAPP	2.00000	S	100 E	250	NWSL	3S	2W27	59
19960226	KENNECOTT UTAH COPPER CORPORATION		59 3	APPLAPP	2.00000	S	3700 E	4250	NWSL	3S	2W16	59
19960314	HYMAS, CHAD	ID	59 5525	FIXDAPP	0.00000	N	764 W	80	SESL	3S	2W33	59
19960314	TURNER, LARRY J.	ID	59 5524	FIXDAPP	0.00000	N	964 W	180	SESL	3S	2W33	59
19960412	RIVERTON (CITY OF)	C	59 1554	APPLAPP	1.50000	S	320 W	122	NESL	3S	1W31	59
19960612	JORDAN VALLEY WATER CONSERVANCY DISTRICT		59 1536	APPLAPP	5.00000	S	840 W	250	E4SL	3S	2W26	59
19960823	KENNECOTT UTAH COPPER CORPORATION		59 3	APPLUNAP	3.00000	S	115 W	2634	NESL	3S	2W27	59
19961114	LARSEN, TERRY AND LINDA LUZITANO	I	59 5546	APPLREJ	0.00000	S	1055 W	325	N4SL	3S	1W26	59
19961121	TURNER, FRANK P.	IDS	59 5547	FIXDAPP	0.00000	N	764 W	80	SESL	3S	2W33	59
19961121	TURNER, LARRY J.		59 5524	APPLWD	0.00000	N	764 W	80	SESL	3S	2W33	59
19961210	HYMAS, CHAD		59 5525	APPLAPP	0.00000	N	764 W	80	SESL	3S	2W33	59
19970220	KENNECOTT UTAH COPPER CORPORATION	IDS	59 3	APPLAPP	2.00000	S	3700 E	4250	NWSL	3S	2W16	59
19970501	DANSIE, A. BRENT		59 5565	TEMPAPP	0.00000	N	1096 E	27	S4SL	3S	2W34	59
19970616	GORDON, DAL & REATHA		59 5085	APPLAPP	0.00000	N	255 W	160	SESL	3S	2W33	59
19970818	KENNECOTT UTAH COPPER CORPORATION		59 3	APPLAPP	3.00000	S	115 W	2634	NESL	3S	2W27	59
19980121	DANSIE, A. BRENT AND ALYCE ANN	IDS O	59 5571	APPLAPP	0.00000	N	1096 E	27	S4SL	3S	2W34	59
19980121	DANSIE, A. BRENT AND ALYCE ANN	IDS O	59 5571	APPLAPP	0.00000	N	900 E	100	S4SL	3S	2W34	59
19980424	CARTER, MYRNA B. (FAMILY TRUST AGREEMENT)		59 5581	APPLAPP	0.00000	N	1330 W	1050	S4SL	3S	2W35	59
19980424	CARTER, MYRNA B. (FAMILY TRUST AGREEMENT)		59 5581	APPLAPP	0.00000	N	1450 W	1230	S4SL	3S	2W35	59
19980617	HAMILTON, LOWELL AND MARY L.	I	59 2720	APPLAPP	0.00000	S	400 W	300	NESL	4S	2W 3	59
19980617	HAMILTON PROPERTIES L.C., LOWELL W.	I	59 5582	APPLAPP	0.00000	S	400 W	1320	NESL	4S	2W 3	59
19980617	HAMILTON PROPERTIES L.C., LOWELL W.	I	59 5582	APPLAPP	0.00000	S	400 W	300	NESL	4S	2W 3	59
19980617	HAMILTON, LOWELL AND MARY L.	I	59 2720	APPLAPP	0.00000	S	400 W	1320	NESL	4S	2W 3	59
19980617	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700	S	2210 W	1372	NESL	3S	2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700	N	1412 W	7	SESL	3S	2W33	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700	N	1485 W	244	S4SL	3S	2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700	S	1428 W	1425	NESL	3S	2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700	S	52 E	5	W4SL	3S	2W34	59

19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 1159 E 2344 W4SL 3S 2W33	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 N 279 W 1167 S4SL 3S 2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 837 W 48 N4SL 4S 2W 3	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 N 2059 W 492 S4SL 3S 2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 593 E 1362 W4SL 3S 2W33	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 2818 W 1395 NESL 3S 2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 N 99 W 327 S4SL 3S 2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 1347 W 2614 NESL 3S 2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 1363 E 1358 NWSL 3S 2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 N 1239 E 872 SWSL 3S 2W34	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 758 E 1350 W4SL 3S 2W33	59
19980728	DANSIE, JESSE RODNEY	DS	59 1200	APPLUNAP	1.62700 S 662 E 44 NWSL 4S 2W 3	59
19980728	DANSIE, JESSE RODNEY	DS	59 3	APPLAPP	3.00000 S 115 W 2634 NESL 3S 2W27	59
19990205	KENNECOTT UTAH COPPER CORPORATION	C	59 5607	APPLUNAP	0.00000 S 770 E 1490 NWSL 3S 1W26	59
19990422	BRIGHTON AND NORTH POINT IRRIGATION COMPANY		59 4544	APPLAPP	0.02200 S 110 W 460 N4SL 3S 1W10	59
19990713	IWAMOTO, TAKEO		59 1117	APPLDIS	0.01500 N 1224 E 90 S4SL 2S 1W34	59
	BARKER, CLYDE		59 1282	APPLDIS	0.01500 S 2435 E 10 N4SL 3S 1W 5	59
19710603	ATWOOD, JAMES	I S	59 3810	APPLCERT	0.100 S 1330 E 260 NWSL 2S 1W28	59
19820625	BAUER, MERRILL R.	I	59 4898	APPLLAPD	0.045 N 1330 E 1040 S4SL 2S 1W28	59
	IVERSON, LE GRAND					

APPENDIX E

Letters of Support and Minutes From City/Town Councils of Affected Communities

Founded 1851



97 N. Pioneer St. • Herriman, UT 84065

Office: (801) 446-5323

Fax: (801) 446-5324

24 November 1999

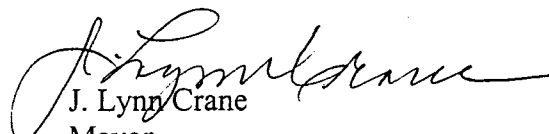
Richard P. Bay, PE
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088-0070

Dear Mr. Bay:

Thank you for the presentation to the Herriman Town Council on Thursday, 18 November. The presentation was most informative and interesting. We appreciate your time and your interest in available water resources for the town of Herriman.

This will also provide an expression of support for the proposed project to reclaim contaminated water for culinary use by the municipalities in the southwest sector of the Valley. Quality water resources are vital to the health and welfare of our communities. We are certainly interested in and support your efforts in behalf of Herriman.

Sincerely,


J. Lynn Crane
Mayor

Councilman Warne made a motion to approve the October 26, 1999 City Council meeting minutes, as printed. Councilman Criner seconded the motion. The vote was unanimous in favor, with Councilman Christensen absent.

II. AWARDS, PRESENTATIONS, APPOINTMENTS, AND PROCLAMATIONS

A. U.S. Census 2000 Presentation By Joanie Burum

Joanie Burum, said she is a recruiter with the U.S. Census. She showed a video outlining the responsibility and impact that the census will have on the community. She provided some handouts (Attachment A). Ms. Burum said she will be training people for the southwest quadrant of the valley. She said there is a lot of information, and there is a lot of needs to meet. She said forms will be sent to the residents on March 15th, requesting census information. She said the second notice will be sent on April 1st, also known as Census Day. She said they will be doing a lot of advertising, and working with the cities to get a good count for the census. She said the people doing the counting will be starting the end of April, or the beginning of May. She said they will also have Quality Assurance Centers for people to bring in their census forms.

B. Jordan Valley Water Conservancy District (Richard Bay) And Kennecott Utah Copper Corporation (John Callender) Presentation

Richard Bay, Jordan Valley Water Conservancy District, and Jon Callender, Kennecott, introduced themselves. Dale Gardner, representative for South Jordan City, and Mr. Henderson with the Jordan Valley Water Conservancy District, were also introduced.

Mr. Bay passed out some information on their proposed Southwest Extraction and Treatment Project (Attachment B).

Jon Callender, Kennecott, showed a map of the Southwest Jordan Valley sulfate concentration at any depth 1994-1996, with 1998-99 data changes. He said in 1986, the State of Utah sued Kennecott Copper for damage to the state's natural resources which, in this case, is ground water resources. He said a settlement was agreed upon in 1995, in which Kennecott Copper paid the State of Utah \$9 million, and put aside a trust fund of \$28 million to restore and remediate this contamination, and provide drinking water as part of the restoration process. He said in 1995, the U.S. EPA began to evaluate the nature of the contamination. He said it was agreed that Kennecott would have the ability and right until the year 2000 to evaluate the situation, and to propose a remedy, which would make use of the trust fund money set aside to provide the restoration and treatment of water in this region. He said in July 2000, the trustee (Diane Nielson, Director of the Utah Department of Environmental Quality) will make the decision of whether or not to accept Kennecott's proposal or to go to a general use of the money and cash in the trust fund.

Mr. Bay showed a map of the proposed groundwater extraction and treatment system (Attachment B). He said the treatment process is a reverse osmosis treatment that produces good drinking water. He reviewed the capital, operation, and maintenance, and replacement costs as outlined in Table 8.6 A (Attachment B). He summarized the proposed funding of the project as outlined in Table 9.0A (Attachment B). He summarized the annual groundwater extraction volumes in table 5.2A (Attachment B). He said they have selected zone A (3500 acre feet) as an allocation that would go directly to the benefit of the 4 communities effected, and would provide a reduced water price for a 50 year period. He reviewed the options for allocation of Zone A benefits, as shown in Tables 11.0A-G (Attachment B). He pointed out Tables 12.4A, which shows the operation, maintenance, replacement and ownership of facilities for the proposed project, and 12.1A, which shows the proposed project schedule. (Attachment B).

Mr. Callender said this proposal will provide better quality water, with higher water pressure, at a lower cost and will utilize existing infrastructure.

Mr. Bay said this proposal will be presented to the State of Utah and the EPA in early December, and they are seeking the City's endorsement.

Mayor McMullin asked what percent of the water supply will come from this source if they support this plan, and what happens to the rights that the City has in the Deer Creek water? Mr. Bay said the water from Deer Creek reservoir constitutes most of what the Jordan Valley Water Conservancy District currently provides to the City. He said this would be a new supply in addition to the Deer Creek water, and would not effect the current contract with the City, or the current water supply that Jordan Valley Water Conservancy District provides to the City. He said it will reduce the amount of water from other sources, such as the Bear River, in the future.

Mayor McMullin asked if after 50 years, would the water blend with the Deer Creek water? Mr. Bay said the water would blend, and the quality would be equivalent. He said the reduced price, as proposed, would be available for 50 years, it would revert back to the normal price. City Administrator Chandler said this would be about 15 percent of the City's total current water usage.

Councilman Warne said Table 11.0B shows that South Jordan has 50 percent of the effected area, but the allocation is only 30 percent. Mr. Bay said they used three criteria to come up with the allocation. Councilman Warne said South Jordan City has been negatively impacted for a long time, and the neighboring communities have the capability to drill wells, which South Jordan does not have. He said as a result, the neighboring communities have also had their water at a cheaper rate because South Jordan has to buy all of their water from the Jordan Valley Water Conservancy District. He feels that should be considered in the allocation. Mr. Bay said they would consider his request, and pointed out that they have had the same request from each of the other three communities for

other reasons. The other three communities are West Jordan, Riverton, and Herriman.

Mayor McMullin asked if they would start construction of this project in 2003? He was told that was correct. He asked what size of line would be installed in 1300 West, and where would the line be located? Mr. Bay said the proposal is to put the pipe in the road right-of-way, and the pipeline is from 6-16 inch in diameter. Mayor McMullin said the City is looking at reconstructing 1300 West, and they need to coordinate with the Jordan Valley Water Conservancy District so the road is not torn up again. Mr. Bay said they would like to work with the City, and see if they can move the schedule up.

Mayor McMullin asked how big the wells are that have been identified in the plan? Mr. Bay said there are 8 wells, and each well has identified 2-4 possible sites. He said they could be as small as 80 feet by 100 feet, and it would be put on a ¼ lot, or larger. Mayor McMullin asked that they meet with Community Development Director Labrum to make sure the wells are not proposed under a project that is planned.

Mr. Callender said two of the sites are already in operation on the Kennecott property.

Mayor McMullin said the City is going to be designing 10400 South, from 2700 West to 3200 West, and they need to include those plans in conjunction with this project.

Mayor McMullin said he thinks this program is great, and he hopes the City will continue their good relationship with Kennecott, as the west side of the City is developed. He recognized the Chairman of the Board of the Jordan Valley Water Conservancy District, and Dale Gardner, South Jordan representative, and said Mr. Gardner has done more for the southwest portion of the valley than any other individual with regards to the water lawsuit over the last several years.

Councilman Warne concurred, and thanked Mr. Gardner for his work.

Councilman Warne asked if the net 1999 water rate (\$203.02) was a fixed cost, and how long would it be effective? Mr. Bay said it is a fixed formula that will be in place for 50 years.

Mayor McMullin asked if they can look at putting the pipe, or a portion of the pipe, in 1300 West, and have Kennecott or the Jordan Valley Water Conservancy District advance the money? Mr. Bay said they will take that request to the Board of Directors. Mr. Callender said they will work with the City.

Councilman Criner made a motion to support this proposal, and to relook at the 30 percent allocation for South Jordan. Councilwoman Liddiard seconded the motion.

Councilman Criner commended Kennecott for their hard work in remedying this

situation.

The vote was unanimous in favor, with Councilman Christensen absent.

III. CITIZEN REQUESTS

Kent Sorenson, Peterson Development, said on the south side of the Jones Farm subdivision, on 10200 South, he is required to install the landscaping in the parkstrip and the homeowners are to maintain the parkstrip. He said it does not make sense to install the landscaping now because the homes will not be completely finished for a year, and he would have to install separate water meters and electrical panels for each house, and then he would take them out when all of the houses are finished. He asked if the City Council would let him post another bond, or add this onto his existing bond, and allow him to delay installing the landscaping for a year?

Councilman Warne asked if he would still be installing the collector street fencing? Mr. Sorenson said the collector street fencing is already in.

Councilman Warne made a motion to allow Peterson Development to landscape the parkstrip on 10200 South in conjunction with the construction of houses in the Jones Farm subdivision, and to allow the developer to post a separate cash bond for improvements, and at the appropriate time, the rest of the bond be released, and that the improvements be done within 12 months. Councilman Criner seconded the motion. The vote was unanimous in favor, with Councilman Christensen absent.

IV. PUBLIC HEARINGS

- A. Text Amendment To Section 12.54.160 Eliminating The Requirement For 8' Wide Landscape Planters Between Double Parking Rows In The Redwood Road MU Zones

Community Development Director Labrum said they found a duplication in the Ordinance regarding parking landscaping. He said the current Ordinance requires an 8 foot park strip between double parking rows, and landscaping on the perimeter of the parking lot. He said staff is recommending that they eliminate the 8 foot parkstrip requirement, and only require planters on single parking rows every 10 stalls, and double rows every 6 stalls. He said it would still provide the desired shading. He said the Boyer Company is the main developer requesting this amendment. He said it will reduce the parking lot area dedicated to grass and shrubs.

Mayor McMullin opened the public hearing. There were no public comments. He closed the public hearing.

APPENDIX F

Water Management Proposal to State Engineer

Jonathan F. Callender, Ph.D.
Kennecott Utah Copper Corporation
HSEQ/Technical Services
P.O. Box 112
Bingham Canyon, Utah 84006-0112

August 16, 1999

Robert L. Morgan, PE, State Engineer
Utah Division of Water Rights
1594 West North Temple, STE 220
PO Box 146300
Salt: Lake City, UT 84114-6300

HAND DELIVERED

Re: Proposal for restricted pumping in the southwestern Jordan Valley area

Dear Mr. Morgan:

Kennecott Utah Copper Corporation herein submits a request for the creation of a restricted pumping zone in certain parts of the former Management Area 8 of the interim Salt Lake Valley Ground Water Management Plan. The proposed restricted area overlies contaminated groundwater in the principal aquifer of the southwestern Jordan Valley, as documented in the enclosed Remedial Investigation and Feasibility Study done under CERCLA and State review (CD-ROM attached).

As part of its responsibilities under CERCLA and the Natural Resource Damage settlement with the State, Kennecott has completed source controls at its facilities to prevent further degradation of groundwater in the basin. Kennecott also has in place an extraction well for acidic water in the groundwater plume, two extraction wells at the leading edge of an elevated sulfate plume in the Bingham Creek area, and an extraction well at the leading edge of sulfate-contaminated water near Lark. Kennecott is currently conducting a joint study with the Jordan Valley Water Conservancy District of the feasibility of extracting and treating elevated sulfate groundwater and providing the treated water for municipal use.

Part of any effective remediation plan must include measures to protect groundwater users and prevent further migration of existing contamination. Although much of the affected aquifer is on Kennecott property (where Kennecott can control groundwater development), Kennecott is particularly concerned about future groundwater development along the outskirts of South Jordan and West Jordan cities, and in the Town of Herriman. Privately owned water rights exist in those areas, and the communities may require diversion of external water rights to the areas as part of development requirements. Unrestricted use of these water rights could draw elevated sulfate and TDS water into the currently clean aquifer, causing damage to the water users and exacerbating groundwater contamination.

Kennecott would like to propose a series of restrictions on future water well development in these areas. These restrictions would include:

1. Completion depth and pumping rate restrictions on wells drilled within 3000 feet south of the known 250-mg/L-sulfate isoconcentration line in the Herriman area, as shown on Figure 4-4 of the RI.
2. Completion depth and pumping rate restrictions on wells drilled within 3000 feet north of the known 250-mg/L-sulfate isoconcentration line in the West Jordan area, as shown on the same figure.

August 16, 1999

3. Prohibition of new well development within the 250-mg/L-sulfate isoconcentration line in the former Kennecott evaporation pond area (South Jordan) until Kennecott installs its NRD remediation and water supply and treatment systems, achieves hydraulic containment of the upgradient groundwater plume, and the system reaches steady state and achieves a sulfate level in the area below 250 mg/L.

Appropriate completion depths and pumping rates would be determined on a case-by-case basis using the most up-to-date information on location and depth of contamination, aquifer properties, and user needs. Kennecott would supply this information to the State Engineer and any water user upon request. The restricted area will shrink as remediation and natural attenuation reduce the size of the contaminated zone.

Kennecott recognizes that these restrictions may adversely affect the water rights of private water users in these areas. Kennecott stands ready to assist affected property owners in obtaining an adequate water supply by identifying alternative water sources, providing technical assistance in siting and completing supply wells, and providing supplemental financing in cases where the presence of contamination causes an additional cost burden to the property owner.

Please review this proposal for aquifer and water-user protection in the southwestern Jordan Valley. Kennecott believes this strategy will prevent additional migration of existing contamination, protect current and potential groundwater users, and facilitate remediation of groundwater in the area. If you agree, Kennecott would like to participate with you in presenting this proposal to the public.

Please contact me at 569-7015 if you have any questions. We would like to meet with you and your staff to discuss this matter at a suitable time.

Sincerely,

Jonathan F. Callender, Ph.D
Manager Strategic Resources

Cc: W. R. Williams, General Manager, KUCC
M. Shoop, Associate General Counsel, KUCC
Dallin Jensen, Parsons, Behle & Latimer

Enc. Figure 4-4, RI/FS